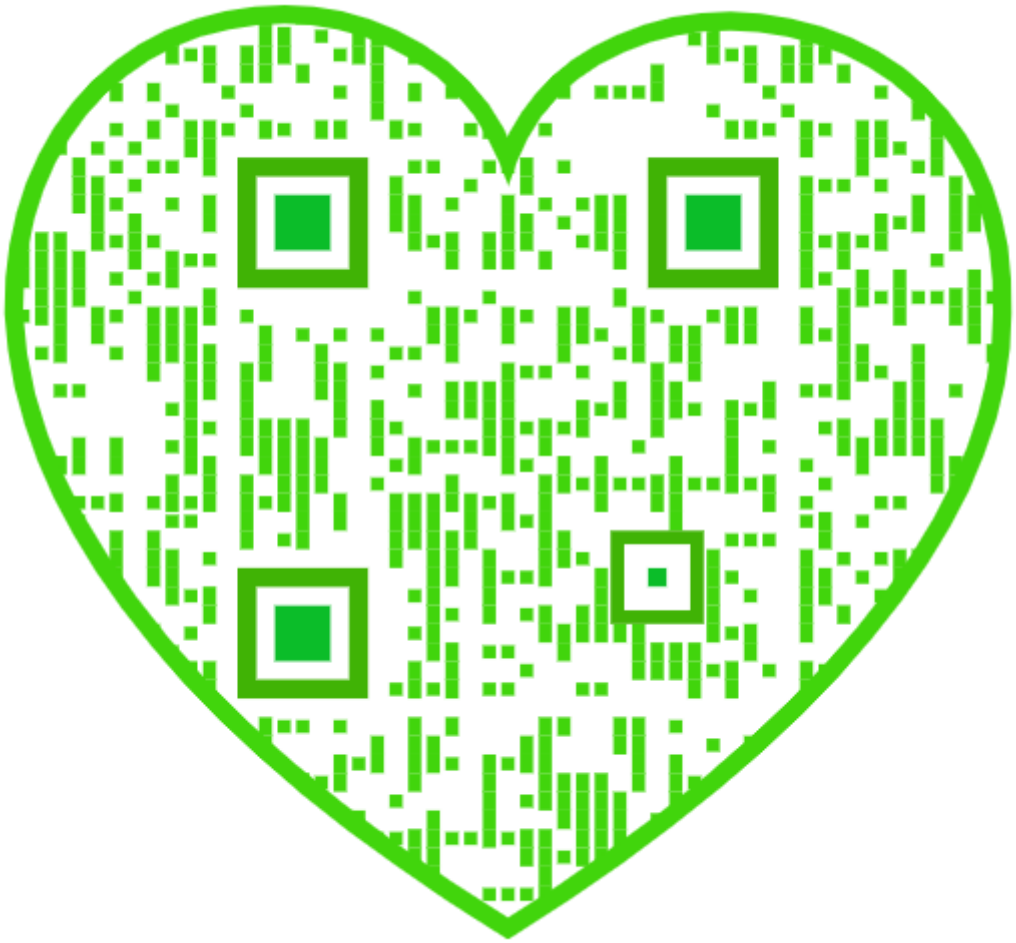
SELECTED READINGS IN RURAL ECONOMICS

CARVER



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SELECTED READINGS IN RURAL ECONOMICS

COMPILED BY

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PREFACE

The following selections are chosen with a view to making available to the student of agricultural economics a mass of excellent material which has been published in widely different places and which, because it is so scattered, is likely to be inconvenient of access. Considerable space has been given to historical material, because a historical background seems necessary to any thorough understanding of present tendencies.

This volume is not intended to take the place of any of the manuals that are now available on the general subject of rural economy, or agricultural economics, nor is it intended to take the place of any of the treatises which are already available on any special subjects, such as rural credit, coöperation, soil management, etc. It is designed rather as a handbook to accompany some of these manuals and to amplify the student's information in the general field of rural economics.

My thanks are due to the numerous authors who have so generously given their consent to this republication of their material and to the publishers who have likewise permitted this use to be made of material, much of which has been copyrighted.

The editor hereby acknowledges his obligations to all these gentlemen and can only hope that the usefulness of the volume will in some measure justify the generosity which they have shown.

T. N. CARVER

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SELECTED READINGS IN RURAL ECONOMICS

INTRODUCTION

THE STUDY OF RURAL ECONOMY

THERE is a saying that the specialist who is only a specialist is a very poor specialist. The purpose of this saying is not to discourage specialization but to make better specialists. It fits in with that ideal of education which requires that the educated man should know everything about something and something about everything. This remark applies to the agricultural specialist as well as to any other kind, and this ideal of education applies to the educated farmer as well as to any other type of educated man. In opposition to the argument for a broad education for the farmer, the question is sometimes pointedly asked — Will this or that kind of knowledge enable the farmer to grow more corn or more potatoes? The answer is that even though it does not, it is still worth while provided it enables the corn and potatoes which he does grow to feed a better man.

It is fair to say, however, that the first attempt to broaden the farmer's education should be to broaden his knowledge of his own occupation or profession. In order to broaden his education it is necessary that he study something else besides the technical process of growing his own crops, but it is not necessary at once or in the very first instance to jump to the opposite extreme of making him skilled in all the learning of the Egyptians. It is my purpose in this discussion to argue that the first effort in broadening his education should be to give him a wide historical knowledge of agriculture as practiced in different ages of human history

and different stages of civilization, and also as it is practiced at the present time in various climates and among various peoples.

Such knowledge is fascinating, it is cultural, and it is practical — all in the highest degree; it therefore has three important qualities which should entitle it to a place in any system of education. It is fascinating because it acquaints us with the basic facts of human experience, not only during that brief span of human life commonly called the historical period but during that vastly greater and more important period which lies back of the dawn of recorded history. The efforts of our ancestors for untold generations to wrest a living from nature have exercised their inventive faculties and strained their powers of reason and imagination more than any other group of problems, not even excepting those of war and religion. By some mysterious process, or the alchemy of heredity, we have deposited somewhere in our present human nature a fundamental instinct for contrivance which delights to exercise itself in the study of these oldest human problems. Not even the city dweller, born and bred in the pent-up quarters of a town, can rid himself of these elemental human instincts. Just as the squirrel in captivity continues to obey the primal impulse to hoard; just as the captive bird feels an impulse to migrate with the recurrence of the migratory season; so the city dweller every spring, with the recurrence of the planting season, feels within himself an irresistible impulse to dig. Let us not be too hasty in ridiculing his feeble efforts to make things grow in a city back yard. He can no more help doing what he does than a young man can help falling in love or a young woman can help fluffing her hair when she thinks that someone is looking at her. By a similar elemental impulse the student finds a rare fascination in the study of the plow — that oldest and most perfect tool known to the human race; and the ox yoke in its various forms — the oldest implement by means of which man has utilized other sources of power than his own muscles to do his work. The evolution of the plow and the various forms in which it is still found in operation, the multitudinous forms in which the ox yoke is fashioned, and a study of the reasons for each form are among the most fascinating subjects with which the mind can occupy itself.

The study of rural economics is cultural because it has to do with men in the broadest possible sense. Men have lived without printing presses or printed books and even without books of any kind. The qualities which characterize our race were fixed before there was art or architecture. Very few, if any, changes or improvements in the race have taken place since, but, except for the lowest savage who lived exclusively by hunting and fishing, no people has ever lived without agriculture, that is, without some means of increasing the soil's capacity to produce desirable things for human consumption. I remember reading a fascinating article a few years ago on the oldest trade in the world. By "trade" was meant a specialized occupation which would exclude agriculture. The oldest trade, or specialized occupation, according to that article, was working in flint. This was fascinating because it introduced one to a very important chapter in the life of the human race. That is cultural information which gives one the widest possible knowledge of and sympathy with man in all phases of his existence and all stages of his civilization. But even the making of flint instruments is less valuable in this respect than the knowledge of the various processes by means of which man has extracted a living from the soil.

This is practical knowledge in a strict business sense, because a wide knowledge of rural economy, of the epochs in agricultural history, of the changes that have taken place, of the reasons why they have taken place, of the tendencies of the present, and of the reasons for those tendencies gives one a broader basis or a larger background for the study of the specific problems of the present than can otherwise be secured. We are now in a period of agricultural reconstruction. Far-reaching and fundamental changes are taking place. Every period of fundamental economic change is a period of strain and stress, of large success and unmerited failure. There are tides in the affairs of men, which, taken at the flood, lead on to fortune, but, it should be added, which, taken at the ebb, lead on to misfortune, to failure, to bankruptcy. Periods of rapid and fundamental change are the periods when these tides ebb and flow most powerfully. They who adjust themselves to the new conditions are carried as by a favorable tide to

success. They who fail to adjust themselves are carried as by an ebbing tide to failure. It is therefore of the utmost practical importance that this broad view of rural economy and agricultural history shall be acquired by every agricultural student. It is important to the individual farmer who is charged primarily with the duty of running a successful farm in order to bring up a successful family. To embark on an agricultural enterprise which is dying is to try to swim against the tide, whereas to embark on an enterprise which is growing is to swim with the tide. It is important also to the agricultural statesman who must, so far as government can be of assistance to our basic industry, direct the machinery of government in the interest of agriculture. To attempt by government effort to stimulate an industry which, under the natural operation of economic forces, will necessarily decay, is a waste of human effort. It is better to lend encouragement and aid to those who are growing, in order that they may grow strong and healthy, than merely to try to arrest the decay of those who are already in process of decaying.

I. GENERAL PRINCIPLES

THE INFLUENCE OF THE CROPS UPON BUSINESS IN AMERICA

By A. P. Andrew

(From *The Quarterly Journal of Economics*, May, 1906)

FLUCTUATIONS in business prosperity result from a wide assortment of causes. They are variously attributed to epidemic states of mind, to changes in legislation, to the development of new industrial processes, to the opening of new trade routes, to excesses in banking, or, again, to changes in the methods of industrial organization. With all of these factors, men may, by taking thought, foresee in some degree their movement, and in some measure may control their outcome. Business welfare in every community depends, however, very largely upon another set of factors, whose caprices none can predict and none can govern, — factors which are closely connected with conditions of weather and of temperature. As there is no country where agriculture is not pursued or where agricultural products are not used either as foodstuffs or as raw materials, there is no country where the chance conditions of weather are not of vital consequence. Nor is the influence of the harvests confined solely to agricultural areas and occupations. It reaches far beyond the fields. It affects manufacturing and transportation interests, banking and foreign trade, and is responsible for many of the larger deviations in commercial prosperity.

The product of agriculture differs from the output of all other branches of production in being so largely independent of human regulation and so little adjustable in amount to demand. This results not merely from the dependence of the harvests upon

meteorologic conditions, over which man obviously has neither control nor prophetic vision, but also from the fact that the agricultural output is in most cases produced by a far greater number of disconnected individuals. The several crops are grown upon a countless number of widely scattered farms, the owners of which in each case are of necessity ignorant for the most part of the intentions and operations of other producers. Even were there no uncertainties of weather to contend against, there would still be serious and unforeseeable maladjustments of supply because of the inability of individual producers to gauge the total output, — an inability which is obviously more marked in the case of agriculture than in either mining or manufacture.

In the following paper we shall study the influence of this peculiarly fortuitous factor upon general business, and attempt to measure the extent of its responsibility for the advances and reverses of trade in America during the past thirty or forty years.

I

One can easily discern four or five important ways in which general business conditions are likely to be affected by the success or failure of the crops.

1. In the first place the size of the crops exerts a considerable influence over the community's power to purchase other goods. If the season has been successful, the farmer is almost sure to increase his expenditures, and use at least a part of his new earnings. He may build an addition to his house or erect a new barn, or he may purchase a piano or a new buggy or new house furnishings or new clothes for himself and his family. Even if he does not use all of the additions to his income himself, but deposits some of them in the banks, they will none the less help to swell the market for other goods in the hands of other customers of the bank. If, further, on account of a plentiful harvest, the prices of food and of certain sorts of clothing are reduced, another result to be expected is that people in general outside of agricultural pursuits will have more to spend upon other things. A bountiful harvest is thus significant for almost all of the occupations in a community. It involves an immediate expansion of

the demand for the most varied sorts of merchandise, and the economic machine in most of its branches is apt to be stimulated to some extent through increased consumption. On the other hand, when the agricultural output fails, the farming population is at once obliged to retrench, to forego contemplated improvements in their farms, to curtail many of the usual or expected expenditures, perhaps even to withdraw deposits from banks, and so abridge the working capital of others. If, too, the prices of breadstuffs and meats rise, many of the rest of the community will have to devote a part of what they are accustomed to spend upon other things to the purchase of food. They will have to abstain from some of their usual purchases in order to buy these necessaries of life. At such times, then, not only will the industries which produce primarily for the farmers feel the pinch of reduced consumption, but other industries as well, which produce objects that in ordinary times are consumed by the masses of men. The clothing trades, for example, may be expected to feel the difference, and the liquor, tobacco, and other similar occupations are also likely to be affected.

2. In the second place the very solvency of a large part of the agricultural population, and of those connected by business relations with them, depends to a considerable degree upon the outcome of the year's harvest. Whether or not the farmer will be able to repay loans which he has contracted, whether or not he will be able to settle his bills with tradesmen and dealers, and whether or not he can pay for his agricultural machinery and farm improvements, will in many cases be decided by the size of the crop. If the crop fails, his various creditors — the banker who has lent him money, the mortgagee of his farm, the shopkeepers from whom he has bought his supplies, and any others to whom he is indebted — will either have to wait, or, if they force a settlement, will not improbably suffer losses. If these delinquencies occur upon too wide a scale, the failure in agriculture may be propagated into other fields, and bankruptcies among bankers, dealers, and manufacturers may ensue. If the harvest, on the other hand, is good, and can be marketed at profitable prices, the capital of the affiliated creditors will once more be set free and made ready for new activities.

3. In the third place, in a country where agricultural products form an important factor in the foreign commerce, the size of the crops will exert a considerable influence upon the balance of trade and the international movement of gold. The extent of the bank reserves in the great financial centers and the contraction or expansion of general credit may in consequence depend most importantly upon the output of the season's harvests. This consideration is of peculiar concern in the United States, where until quite recently two thirds or more of the total exports have consisted of such produce.[1] When the American crops are abundant, our exports very naturally tend to increase, and gold imports are apt to occur. That in turn means large cash holdings in the banks, with, under normal conditions, the accompaniments of expanding credit and buoyant trade. When, on the other hand, the crops fail, the movement of exports and of gold swings in the contrary direction, and in that event we are apt to be confronted with dwindling bank reserves, a contingent contraction of the general credit, declining business, and less activity in trade.

4. Again, the size of such crops as are not consumed in the locality of their production is of great significance for the transportation interests. One has only to observe the fluctuations in railway earnings month by month during the course of any normal year to realize how important a factor the harvests are in railway affairs. It is in the months of the harvests, from August to December, that railway traffic and railway earnings normally reach their highest levels, the earnings not infrequently being 30 to

[1] Exports of agricultural products, per cent of total exports:

Year	Per Cent	Year	Per Cent
1890	74.51	1898	70.54
1891	73.69	1899	65.19
1892	78.60	1900	60.98
1893	74.05	1901	64.62
1894	72.28	1902	62.83
1895	69.73	1903	62.73
1896	66.02	1904	59.48
1897	66.23	1905	55.03

40 per cent higher in September or October than in May or June. A bumper crop in the case of a commodity like wheat, which is so largely consumed at a long distance from the place of its production, is consequently a source of great profit to the railroads concerned, while a poor crop means diminished traffic and reduced earnings.

5. Finally, the success or failure of certain crops is also of significance for those industries into which the crop enters as a raw material. A failure of the wheat crop will obviously depress the milling industry, and a failure of the cotton crop will curtail the earnings of the cotton factories, not only those in the vicinity of the cotton-growing states, but those in New or old England as well. A failure of the corn crop similarly will diminish the profits of cattle-raising, may work injury to the packing interests, and to some extent may affect also the distillers of whisky.

There are, then, five important ways in which the conditions of agriculture are likely to influence general business: (1) by affecting the community's consumption of other goods; (2) by affecting the solvency and credit of farmers and those engaged in dealings with them; (3) by affecting the balance of trade and the bank reserves; (4) by affecting transportation interests; (5) by affecting manufacturing interests for which the agricultural product is a raw material.

Obviously, the greater the proportion of the population of a country that is engaged in agriculture, the more severely the country will be affected by a sudden fluctuation in the crops; and, as so large a proportion of the American people are occupied with agricultural pursuits, we should naturally expect the condition of the crops to be of greater influence upon trade conditions in this than in many other countries. Those who live in the large cities or are familiar only with such infertile regions as the Atlantic seaboard are apt to forget that we are still very largely an agricultural people. According to the census of 1900, out of a total of twenty-nine million persons reckoned as gainfully occupied, more than ten millions were engaged in agricultural pursuits. That is to say, more than one third of those engaged in gainful occupations were connected with farming of one or

another sort. We should naturally expect, then, the output of agriculture to be of peculiarly intimate and conspicuous influence upon general business conditions in the United States.

II

At the same time there are, needless to say, other factors than the output of our farms which may affect our prosperity, and whose influence may quite outweigh the influence of our harvests.

1. First, it will be noted that in the case of those agricultural products which belong in large degree to foreign trade the financial success or failure of the harvest in any given locality depends to some extent upon the output of the same product elsewhere. An unusually large harvest in this country, if accompanied by small harvests abroad, obviously means prosperity for the American farmers, means large exports and high prices, tends to mean incoming gold and expanding credit. But, if accompanied by excessive crops abroad and flagging demand, it means, on the other hand, extraordinarily low prices, diminished exports, and depression in agriculture, if not in general trade. We have examples of each of these situations in the period centering about 1880. In 1879 the wheat crop, the corn crop, and the cotton crop were all the greatest ever known in our history up to that time. But in England and Europe the wheat crop was a failure on account of excessive rain and cold, and in India the cotton crop was a partial failure. We had then the conditions which would naturally result in prosperity for agriculture and flourishing trade. In 1880 these conditions were repeated. All three of these crops in America exceeded even the levels of 1879, and the foreign crops again ran short. There resulted, as everyone knows, a business development rapid beyond all parallels in our previous commercial history. But note the situation only two years later. The American wheat and cotton crops in 1882 exceeded even the record-breaking totals of 1880, and the corn crop was the largest, with one exception, in our history. But in that year the countries of Europe also produced the greatest total wheat output in their history. The price of wheat in America accordingly fell, and the amount exported was strikingly diminished. The market for cotton also proved to

be overstocked, and the price of cotton likewise underwent a serious decline. There was no new development of business, no great revival of prosperity after the harvests of 1882. Although the crops of wheat and cotton were the most abundant that America had ever known, the following year was one of "steadily increasing depression." So also two years later, in 1884, the American wheat and corn crops once more bulked larger than ever. All previous records for their size were broken; but here again the records of the rest of the world for output were also broken, and the price of wheat in consequence declined to the lowest level it had yet touched during the century, and the value of the total crop in the end proved less than it had been in any year since 1878. The agricultural output in America in 1884, as in 1882, would have led one to expect a fresh outburst of general activity, but the movement in the latter case as in the former was checked by the concurrent abundance abroad, and the year that followed in each case remained one of marked depression.

2. In the second place, even where the country is blessed with the desired conjunction of domestic crop abundance and foreign crop failures, the revival of business activity may be prevented by the operation of other influences.

In 1891 the wheat crop failed everywhere in Europe, and this occurred on the top of two serious harvest shortages in 1889 and 1890. At the same time the American crop proved larger than ever, — proved larger, in fact, by one hundred million bushels than the record crop before that date. The export of grain ran even beyond the enormous exports of 1879 and 1880, and reached in the ensuing year the highest level ever known before or since. The cotton fields also turned out by far the largest crop on record up to that time, and our exports of cotton exceeded all precedents. The corn crop was also abundant, being, with one exception, the largest ever harvested. And yet, with all these favoring conditions, with bumper crops in all lines in this country and scant crops abroad, with record-breaking shipments of wheat and cotton, with the heaviest export trade ever known in the history of our country, and the most favorable balance of trade in a decade, there was no extraordinary outburst of activity in general trade, no such

expansion of business as had occurred a dozen years before under similar circumstances. No matter what we select as a gauge of prosperity, we find the same evidence of a relatively slack development in the early nineties, as compared with either the upward movement of the early eighties or that of a decade later. We may take the statistics of the per capita foreign trade, or the railway earnings per mile, or the bank clearings, or the stock exchange transactions, or the prices of commodities and securities, and we find them all telling the same story. The maximal records of the period all fell far short of those of the preceding or those of the succeeding cycle of trade. The continued agitation of the silver question and the dwindling reserves of the Treasury, presenting as they did an ominous outlook for our monetary standard, sufficed to prevent any considerable improvement in domestic trade and manufactures, such as otherwise would have resulted from the bountiful harvests and the immense export trade. American securities held abroad began to be returned in such quantities as to counteract what would naturally have been an enormously favorable balance of indebtedness; and American investors themselves hesitated from risking capital so long as Congress could not be depended upon to maintain the value of the country's money. There was no season of buoyant activity in 1891 and 1892. Trade continued sluggish. Congress had cast a deadening blight over business which even the plenteous bounty of nature was unable to overcome.

3. A third fact is to be noted in discussing the relations of the crops to economic cycles in a country which, like the United States, ranges over a very extensive and diversified territory, and produces in different regions several very different crops. These various crops — belonging, as they do, to different latitudes and soils, subject to very unlike conditions of weather and temperature — are by no means bound to stand or fall together. An unusually small harvest in one line may be concurrent with unprecedented abundance in another. The failure of one crop may exert a depressing influence in one part of the country, and yet be more than compensated as regards the country as a whole by expanding production and flourishing activity in another.

The three most important American crops are, respectively, corn, cotton, and wheat. Corn, although it is grown in greater or less quantities throughout the country, wherever there is tillable land, and although there are few places where it is grown exclusively, is of preponderating importance in the "corn belt." This belt includes the northern parts of Ohio, Indiana, and Illinois, the whole of Iowa, and portions of Missouri, Kansas, and Nebraska. Cotton, our next most important crop, is much more rigidly restricted. It is produced exclusively in a compact strip of country, running along the Gulf States from eastern Texas, including the Carolinas on the east and parts of Arkansas and western Tennessee on the north. Wheat, like corn, is raised to some extent in all or most of the states (twenty-five raising winter wheat, nineteen spring wheat, and some both), but in this case also there is a distinct and comparatively limited area known as the "wheat region" in the north central river basin, and more than half of the wheat raised in the country comes from the six contiguous states, Minnesota, North and South Dakota, Kansas, Nebraska, and Missouri, the first three growing spring wheat, the latter three winter wheat.[1]

Among these three crops may occur every conceivable combination of success and failure. The crops of the Southern States may be abundant when those of the Middle West are poor, which, for instance, was the case in 1894, when the cotton yield was enormous and the production of wheat and corn fell short of earlier levels. In 1895, on the other hand, the contrary situation occurred, and we had a very short cotton crop concurring with a record-breaking output of corn. Although the wheat and corn crops belong to somewhat the same regions, they may, nevertheless, vary diametrically from each other. You may find a small wheat crop, as in 1885, or in 1896, combined in each case with a record-breaking corn crop, or *vice versa* a record-breaking wheat crop, as in 1901, contemporaneous with a failure of the corn crop.

And so, while one might presume, from the wide prevalence of agriculture in America and its many interrelations with transportation interests, foreign trade, banking, and other occupations,

[1] See the maps in the *Statistical Atlas*, 1900, plates 154, 156, 158.

that the general condition of business would follow rather closely the changes in the country's crops, one can see that such a generalization is only safe when rigidly qualified and carefully applied. One must bear in mind not only that the condition of the crops elsewhere will always affect the *value* of our domestic crops, whatever may have been their size, but also that other conditions, such as changes in financial legislation, passed or impending, may outweigh all of the influences of agriculture upon business; and, finally, one must remember that in a country as extensive as ours the effect of success or failure with any one kind of crop may always be largely offset by an opposite condition with some of the other crops.

III

Confronted with the evidence that our several crops do not always succeed or fail in the same seasons, one naturally asks which of the crops it is whose success or failure exerts the greater influence over the conditions of general business. This is a question the solution of which is so difficult and involves the disentanglement of so many interacting factors that no one is competent to offer for it anything more decisive than a personal belief, and the best we can do here is to recall some of the points of view, most of them already mentioned, which must form the basis of that belief.

At first glance one might suppose that the crop which is most extensive, or at any rate which is most valuable, would be the one which is most influential for general business. And that would be the corn crop. Of all the industries prosecuted in this country the most considerable by far, measured by the value of its output, is corn-growing. Corn is our leading product, not only when we are speaking of agriculture, but also when we include every kind of production. Our leading crops in the year 1905, according to the estimates of the Secretary of Agriculture,[1] ranked as follows:

[1] The estimates are those made at the end of the year in question. These estimates are always changed more or less before the annual volume is published, and at times even subsequent to its issue. They are at best, as are all of the figures in this paper, only estimates, derived from multifarious sources, and liable to large errors.

Corn	$1,216,000,000	Oats	$282,000,000
Milk and butter	665,000,000	Potatoes	138,000,000
Hay	605,000,000	Barley	58,000,000
Cotton	575,000,000	Tobacco	52,000,000
Wheat	525,000,000	Sugar cane and sugar beets	50,000,000
Eggs	520,000,000	Rice	14,000,000

With these may be compared the following estimates of the value of the output in other leading industries during the same year or during the latest year for which figures are available:

Pig iron	$412,000,000
Coal	439,000,000
Gold	86,000,000
Silver	36,000,000
Railroad gross receipts	1,906,000,000
Railroad net earnings	639,000,000

The output of corn usually bulks three or four times that of wheat; and, although the price per bushel is considerably less, the value of the corn crop not infrequently aggregates a sum more than twice that of wheat, more, too, than the total value of the crops of wheat and cotton combined.[1] The annual output of corn

[1] Estimated value of the leading American crops, from reports of the Department of Agriculture (millions of dollars):

Year	Corn*	Wheat*	Cotton	Year	Corn*	Wheat*	Cotton
1880	679	474	280	1893	591	213	263†
1881	759	456	259	1894	554	225	262†
1882	783	445	309	1895	544	237	269†
1883	658	383	250	1896	491	310	287†
1884	640	330	253	1897	501	428	294†
1885	635	275	269	1898	552	392	260†
1886	610	314	257	1899	629	319	357†
1887	646	310	291	1900	751	323	469†
1888	677	385	292	1901	921	467	414†
1889	597	342	308	1902	1017	422	453†
1890	754	334	350†	1903	952	443	587
1891	836	513	313†	1904	1087	510	586
1892	642	322	268†	1905	1116	518	

* Farm value December 1.

† As reported by Henry G. Hester, secretary New Orleans Cotton Exchange.

is, therefore, quite naturally regarded by many as more consequential for trade than the output of our other crops. It represents an annual income in recent years of more than a billion of dollars, so that even a small percentage of change in its dimensions means a considerable fluctuation in the income of the community, and in the community's power to consume other goods. The following table shows the difference in the estimated value of the several crops from one year to another since 1890:

Year	Corn.	Wheat	Cotton
1890	+ 157[1]	− 81[1]	+ 42[1]
1891	+ 82	+ 179	− 37
1892	− 194	− 191	− 45
1893	− 51	− 109	− 5
1894	− 37	+ 12	− 1
1895	− 10	+ 12	+ 7
1896	− 53	+ 73	+ 18
1897	+ 10	+ 118	+ 7
1898	+ 51	− 36	− 34
1899	+ 77	− 73	+ 97
1900	+ 122	+ 4	+ 112
1901	+ 170	+ 144	− 55
1902	+ 96	− 45	+ 39
1903	− 65	+ 21	+ 134
1904	+ 135	+ 57	− 1
1905	+ 29	+ 8	
Total	1339	1090	634
Average	83	68	42

It will be seen that the variations in the value of the corn crop during these fifteen years have reached an average of $83,000,000, those of wheat an average of $68,000,000, those of cotton an average of $42,000,000. The variations in the value of the corn product as estimated have not, to be sure, exceeded the variations in the value of the wheat product by as large an average as might have been expected. Yet they have been, on the whole, more extensive, and, were no other conditions than variations in crop value and their effects upon consumption to be taken into account, the outturn of the cornfields would be rightly regarded as of

[1] Millions of dollars.

greater significance for general business than that of any of our other crops, and ought naturally to be looked to as the source of more considerable trade fluctuations.

From certain points of view, however, the crop which is most largely exported might be expected to affect trade conditions the most seriously in that its fluctuations may induce changes in the balance of trade, in the international movement of gold, and in the bank reserves. A falling off in such a crop might rapidly reverse our trade balance, causing gold exports and a reduction in the cash holdings of our financial centers, and so might produce a serious stringency in the money market, while the success of such a crop, on the other hand, would not improbably result in an inflow of gold, the swelling of the bank reserves, and so might stimulate a spirit of confidence and introduce a period of buoyant expansion.

Ranked from this point of view, the cotton crop would at first glance appear the most important; for, if corn is our leading product, cotton is our leading export.

Year ending June 30	Total Exports of Domestic Produce	Exports of Raw Cotton	Exports of Wheat and Wheat Flour	Exports of Corn and Corn Meal	Exports of Live Stock	Exports of Meat and Dairy Products
1890	845[1]	250[1]	102[1]	43[1]		
1891	872	290	106	18	32[1]	139[1]
1892	1015	258	236	42	36	141
1893	831	188	169	25	27	139
1894	869	210	128	30	35	146
1895	793	204	95	15	35	135
1896	863	190	91	38	41	133
1897	1032	230	115	54	43	138
1898	1210	230	214	75	46	167
1899	1203	209	177	70	37	175
1900	1370	241	140	87	43	184
1901	1460	313	166	84	52	196
1902	1355	290	178	17	44	199
1903	1392	316	161	41	34	179
1904	1435	370	104	31	47	176
1905	1491	379	44	48	46	169

The value of our cotton exports far exceeds the value of the exports of any other article. In recent years our cotton exports

[1] Millions of dollars.

have attained proportions averaging more than a million dollars per day, which is two or three times the value of the wheat exported, and all the way from three to eighteen times the value of the corn exported. In fact, they constitute on the average a fourth or a fifth of the country's total exports of domestic merchandise. The exports of raw cotton during the past decade have reached an annual average value of $260,000,000, not to mention an export of manufactured cotton averaging $22,000,000, while the wheat exports, both in the form of grain and of flour, have only reached an average of $138,000,000, and the corn exports only $51,000,000 per year. In general, we export about two thirds of our cotton products, between 30 and 40 per cent of our wheat, but only 3 or 4 per cent of our corn.[1] Of course, it will be remembered that we export a large quantity of our corn product indirectly in the form of corn-fed cattle and meat products. Of this amount we have no means of estimation, not being able to separate the stock fed upon corn from that grown upon other fodder. Of live stock we have exported during the past ten years an annual average value of $43,000,000, including cattle, hogs, horses, mules, and sheep; and of meat, including pork, beef, and mutton, and of dairy products, we have exported an annual

[1] Per cent of product exported:

Year*	Cotton	Wheat and Wheat Flour	Corn and Corn Meal	Year*	Cotton	Wheat and Wheat Flour	Corn and Corn Meal
	Per cent	*Per cent*	*Per cent*		*Per cent*	*Per cent*	*Per cent*
1880	68.47	37.38	5.46	1893	71.20	41.47	4.11
1881	67.23	31.82	3.71	1894	69.83	31.46	2.36
1882	67.20	29.33	2.58	1895	65.00	27.07	4.70
1883	67.56	26.49	2.99	1896	70.59	33.93	7.83
1884	68.96	25.86	2.95	1897	67.82	40.91	11.14
1885	64.68	26.48	3.35	1898	65.12	32.97	9.21
1886	68.71	33.66	2.48	1899	65.18	34.00	10.30
1887	65.83	26.23	1.74	1900	62.87	41.36	8.62
1888	69.33	21.31	3.57	1901	64.47	31.37	1.84
1889	68.15	22.31	4.85	1902	65.01	30.28	3.04
1890	67.36	26.60	2.15	1903	60.27	18.92	2.59
1891	65.13	36.88	3.72	1904	61.55	7.99	3.66
1892	65.99	37.20	2.89				

* The figures are for the years beginning July 1 in the case of wheat and corn and for the years beginning September 1 in the case of cotton.

average of $171,000,000. Could we estimate the amount of corn which is exported in this form we should doubtless find corn occupying a much more important position in the export trade than is indicated by the statistics just given of direct corn exports, yet obviously a change in the size of the corn crop exerts no immediate effect upon these indirect exports, and is only registered in the commerce of subsequent years.

Cotton, then, plays the predominant rôle in our export trade, and one might readily conclude that the outturn of the cotton crop is of greater and more immediate significance for our foreign balance than the outturn of any other crop. An examination, however, of the trade statistics for the past fifteen years, which were just cited, reveals grounds for a different conclusion. The value of our cotton exports, enormous as the aggregate has been, has not varied from year to year as widely as the value of our exports of wheat, and not in fact so very much more widely than our comparatively small exports of corn. During this decade and a half the widest fluctuations in the cotton exports occurred between the years 1892 and 1893 and again between the years 1900 and 1901, when the variations amounted to $70,000,000 and $72,000,000 respectively; yet twice during this same period the variations in the wheat exports exceeded these figures very strikingly between 1897 and 1898, when the wheat exports increased by $99,000,000, and between 1891 and 1892, when our wheat exports advanced by the amazing sum of $130,000,000. Notwithstanding, too, the minor proportions of our corn exports, their amounts have fluctuated from one year to another almost as widely as those of cotton. The failure of the crop in 1901, for instance, diminished the exports of corn and of corn meal by no less than $67,000,000; and, if we turn to the indirect effects visible a year or so later in the exports of meat and cattle, we find that the exports of live stock, for instance, declined by 1903 some $18,000,000 below the level of 1901, and the exports of meat and dairy products fell off some $17,000,000 during these two years. Even in the case of corn, therefore, the ultimate effects upon the export balance of a change in the size of the crop might be shown to be more severe than in the case of cotton.

The striking preponderance of cotton over all other products in our export trade, therefore, does not prove that the amount of our annual yield of cotton is the determining factor in our trade balance. Whatever the vicissitudes of the crop, the value of our cotton exports remains less liable to violent fluctuations than the value of our less extensive wheat exports. The reason is that the price of cotton adjusts itself more closely to the size of the American crop than does the price of wheat, and this gives greater constancy both to the value of the crop as a whole and to the value of the exports. American conditions do not necessarily control the price of wheat; for, although the United States produces more wheat than any other single nation in the world, it produces less than a quarter of the world's total supply. On the other hand, this country is the source of nearly three quarters of the world's cotton, and what the world pays for that article is virtually determined by the mutations of the American crop. When the American crops are extraordinarily abundant, the world price of cotton tends to decline, and so the aggregate values of our cotton crop and of our cotton exports seldom increase proportionally to the increase in the quantity produced and exported. In fact, the greater bulk is sometimes more than offset by the lower price, and we may have such a situation as occurred in the years 1898 and 1899, when the crop broke all known records of output, with one exception, and yet the total value of the crop was the lowest recorded during the past eighteen years. The value of the exports, too, of that superabundant year had been exceeded many times before, and have been invariably surpassed in the subsequent years, although their amount was, with a single exception, the greatest ever known. Conversely, a diminution in the amount exported, because of a comparative failure of the American crops, does not necessarily involve a serious reduction in the total value of the exports. The crop of the season 1903–1904 was a comparative failure, being the smallest, with one exception, in seven years, yet its estimated value was more than double that of the record-breaking year 1898–1899, and exceeded that of any other year by more than $100,000,000. The exports of cotton in this same year of so-called crop failure, though the smallest in bulk,

with one exception, during a decade, outdistanced the best of records in value by nearly $60,000,000. The vicissitudes of the cotton crop are, therefore, not so vitally significant for our foreign trade as one might suppose from a superficial consideration of the relative amounts exported of the various crops. Any increase or decrease in the bulk of the American cotton crop is more than likely to be compensated for by a converse movement in the price of cotton, and changes in the amount exported are apt to be offset by opposite changes in value. This is much less certain to occur in the case of wheat, because of the wider area in the world over which it can be produced, and the relatively smaller contribution which America makes to the total supply, which in the end determines its price. On the whole, then, we may tentatively conclude that the success or failure of the wheat harvest, more than that of any other vegetable product, is productive of sudden and important changes in the balance of trade.

But another consideration which we saw to be influential was the extent to which the crop is transported. Very little of our enormous corn supply is carried far from the locality of its production. Most of it is fed to live stock, especially hogs and cattle, which are raised in the region where it is produced, the principal meat-producing states being those of the corn belt. Of course, a failure of the corn crop will tend eventually (in the course, perhaps, of a year or so) to reduce the shipments of cattle and meat to the seaboard and to places of consumption, but fluctuations in the corn crop have but little direct and immediate effect upon the amount of freight carried. As for cotton, domestic means of transport are only slightly affected by the size of the crop, two thirds of which goes abroad, the greater part directly from Southern ports at Galveston, New Orleans, and Savannah, and principally in foreign vessels. The wheat crop, on the other hand, is much more closely connected with our transportation interests, for the wheat of the Middle West is carried far and wide by rail and steamship to all ends of the country. Not only the third of our total product which is destined for export, but a great part of the grain or flour destined for domestic consumption as well, has to be shipped over considerable distances. An abundance or shortage

of the wheat crop, therefore, makes at once a serious difference in the amount of railway traffic, and is at once registered in the railway earnings. One can see, then, how indirectly a wide deviation in the wheat crop, by giving a new turn to railway earnings, may affect railway construction and expenditures for railway maintenance, and so in turn may even cause some reverberations in the iron industry. As the wheat crop appeared of primary significance for our foreign trade and the bank reserves of our financial centers, so it takes first rank also from the point of view of our railway and shipping interests.

Again, we observed that the success or failure of the harvests would affect those occupations in which agricultural products entered as a raw material. As for cotton, manufacturing interests will be directly touched by variations in the cotton crop, not only in the cotton mills of Massachusetts and Rhode Island, but also in the rapidly multiplying mills of Georgia and the other Southern States. Changes in the corn supply will directly affect cattle-raising, and indirectly will affect the packing interests and the distillers. Changes in the wheat supply will have their direct effect in the centers of the milling industry. The output of each of the crops is thus of great consequence to the business interests of a particular locality; but it would be extremely difficult, looking at the country as a whole, to estimate the comparative influence of the several crops in this connection. Only a third of the cotton remains for manufacture within the country, while more than two thirds of the wheat and over nineteen twentieths of the corn remain; but, on the other hand, cotton passes through many more processes in the course of its manufacture, and occasions employment for much more labor and capital for a given amount, than either of the other products. And, similarly, a somewhat greater proportion of the wheat than of the corn passes through a factory or mill, and gives further employment to labor. It appears fatuous, therefore, to attempt to decide which of these crops is connected the most importantly with other industries as a source of raw material.

Looking at the question broadly and from all points of view, although the matter is not one upon which a decisive judgment

can be rendered, it would appear that in the past variations in the wheat crop have probably been the most significant for general business. That crop has often been worth less than half of the value of the corn crop, and changes in its amount have probably not affected the country's general income and consumption as much; but it has been much more closely connected with the transportation interests of the country, and it has exerted a more variable and more immediate influence upon the general trade balance. The cotton crop has frequently been more valuable, and has entered in far greater proportions into our foreign trade; but the cotton product does not affect American transportation interests to a similar extent, and the value of our cotton exports has remained comparatively steady, whatever has been their amount. Of the several American crops, then, we may tentatively conclude that that of wheat is most closely related to business at large, and that the fluctuations in its output are the most widely felt. This by no means implies that the wheat crop has always been the dominant factor in determining the measure of prosperity in trade. Numerous other influences, as we have already seen, have played from time to time the leading rôle, and there have been occasional years, as in 1884–1885, when a season of profound depression in business accompanied and followed a record-breaking output of wheat, or as in 1900–1901, when a period of great buoyancy and commercial advance ensued upon a deficient crop of wheat. The supposition which we have made with regard to wheat is only one of general tendency, liable, as is every influence in this world, to be overbalanced by counteracting factors.

Granting that wheat has exceeded the other agricultural products in the past as a trade-influencing factor, its continued supremacy in the future is still open to question. Conditions are continually changing, and within the past two or three years there have not been lacking indications of the diminishing importance of the wheat crop as a factor in our trade balance. Our wheat exports declined so rapidly in 1904 and 1905 that for the time being we appeared no longer in the ranks of important wheat exporters. The total wheat exports during the fiscal year 1904–1905 were the smallest in our history since 1872. Whether this

situation marks a permanent change or only a temporary divergence due to a succession of short crops, one cannot as yet determine. Certainly, crops which would have seemed very large ten years ago would to-day be insufficient to feed our people and leave a surplus. Many have, therefore, jumped to the conclusion that we shall never regain our place as a wheat-exporting nation, and that with the rapid increase of our population we shall produce little more grain than is necessary for home consumption. If this should prove to be the case, the influence of the wheat crop upon our foreign balance, upon gold exports, and upon bank reserves would evidently cease to play in the future the part it has played in the past.

IV

. . . During that period [1873 to the present] there have occurred, along with many minor fluctuations, two great movements of industrial and commercial advance, each of amazing proportions, and each initiated by a series of extraordinarily successful harvests in America which were coincident with extraordinarily poor harvests abroad. The first was the movement from 1879 to 1882, when the country was rapidly lifted from a six-year slough of business depression to one of the most prosperous periods in its entire history. Of this movement and its causes, which are familiar facts of history, some mention has already been made. Its propelling force arose unquestionably from the coincidence of a series of crop failures abroad in 1879, 1880, and 1881, — failures for which in duration and extent, it is said, "there had been no parallel in four centuries," [1] — with two successive American harvests, in 1879 and 1880, whose dimensions exceeded all precedents in all of the leading products. These conditions not only resulted in huge profits for American farmers and dealers in produce: they stimulated the earnings of the railways; they induced a favorable balance of trade and the influx of more than two hundred millions of gold during the three years from 1879 to 1881; and they instigated a spirit of confidence, an expansion of demand,

[1] D. A. Wells, Recent Economic Changes, p. 6.

and an activity of exchange which carried the records of American business of every sort far beyond the highest levels known before.

The second great movement of advance is that which began in 1897, and still continues to-day (1906) after nine fabulous years of prosperity and almost uninterrupted increase. This movement also originated in an extraordinarily remunerative harvest, and its unprecedented duration is doubtless in large measure due to the prolonged continuance of agricultural success. After four years of prolonged depression, during which any revival of business had been prevented by the threat of a revolutionary change in our standard currency, the way was cleared of this hindrance at last in the autumn of 1896 by the overwhelming defeat of the extremist program in the presidential election. To this defeat the agricultural situation of that autumn contributed, as everyone remembers, a decisive influence. The conjunction of a failure of the wheat crop in India with a shortage in Australia served to raise the price of American wheat from 53 cents per bushel in August to $94\frac{1}{2}$ cents at the time of the election in November, upsetting the arguments of those who had advocated the unlimited coinage of silver as the only means of raising prices, and turning the electoral tide against them in several of the doubtful Middle Western states. The principal obstacle to recovery being thus removed, in the following year a strikingly favorable turn in agriculture gave the necessary fillip to trade and set the country once more on the highway of prosperity.

Early in the summer of 1897 it became known that the crops were again a failure in India, Australia, and in the Argentine Republic. Russia had had a poor wheat crop in 1896, and seemed likely to have another in 1897. In France, on account of a scorching drought, the harvest was very deficient. In Austria storms and floods had done great damage. In a word, for one reason or another, the season proved disastrous all over Europe, and the European wheat crop fell short of that of the previous year by some three hundred fifty million bushels, — a loss of about one third. The demand for American wheat in consequence assumed new dimensions, and the price in August ran considerably above a dollar per bushel, or more than twice the price prevailing at that season

a year before. The American crop, meanwhile, ran ahead of that of the previous year by 145,000,000 bushels, and proved, with one exception, the largest in our history. The farmers of the Middle West got two or three times as much per bushel as they had been receiving for several years; and, as they disposed of their increased output at these much advanced prices, they were rapidly lifted from a condition of extreme depression to one of prosperous activity. They began to pay off their farm mortgages, and so set locked-up capital free; and at the same time they greatly enlarged their purchases of goods. This in turn gave a stimulus to trade in the factory centers of the East, which were called upon to meet the new demand for manufactured goods. The same conditions added enormously to the tonnage and earnings of the Western railroads, opening up a new era of prosperity for them; and, as the trade of transportations is one of great importance and of wide-spread ownership, the whole country reaped an advantage.

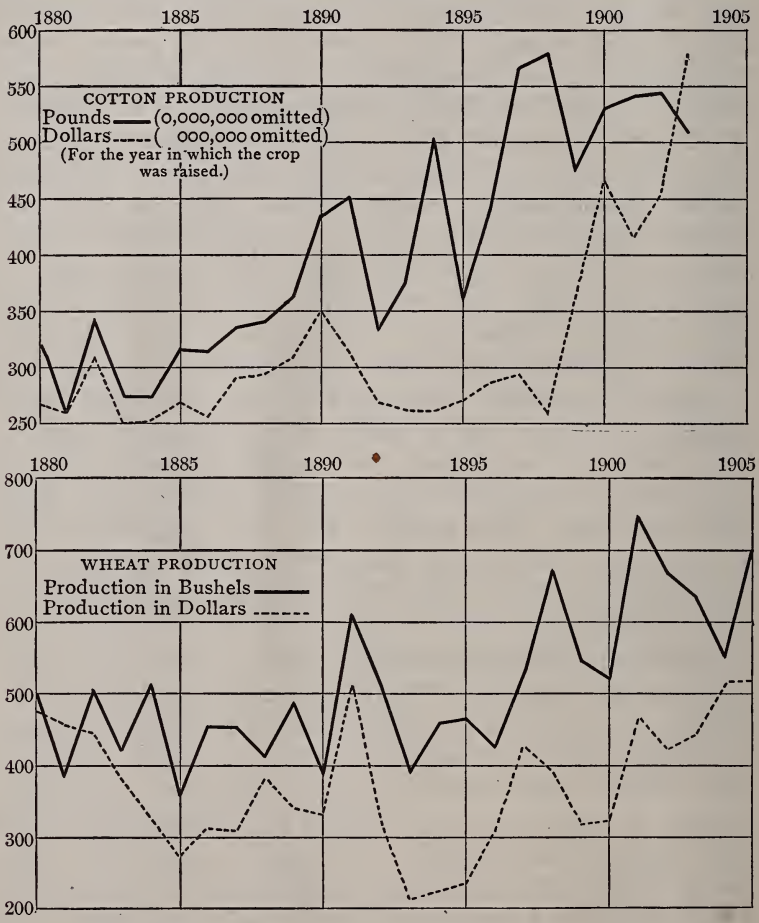
The bearing of the crop situation of 1897 upon our foreign trade was no less important. Our exports of wheat and corn increased in the course of the year that followed by a valuation of over $120,000,000, and our relations with the international market were reversed. Instead of exporting gold, we imported $142,000,000. Through this movement not only was credit stimulated by the enlargement of the cash resources of the banks, but also by the new accessions to the government's gold reserve, which had been passing through the direst of vicissitudes during the years just preceding, and which now rose to the highest figure ever reached in the country's history. Great agricultural windfalls had once more set the wheels of trade in motion and initiated a new period of prosperity.

The prolonged continuance of this upward tide beyond the term of any previous period of prosperity in the past half century has amazed the world and aroused much speculation as to its cause. Some have attributed it to the wane of radicalism in politics and the growing conservatism of our legislatures in matters of currency and finance. Some have connected it with the increasing concentration of control in industry and transportation which has obliterated the wars between rival interests and the

protracted discrepancies between supply and demand that formerly afflicted the country's business. Many have credited it to the increasing output of gold, which has almost doubled in the past ten years and more than trebled in the past twenty, and which has tended steadily to inflate bank reserves, prices, and profits. Others have attached great importance to the growing centralization of power among the New York banking interests, and the extension of their international affiliations, with the consequent increase in their ability to secure foreign assistance in times of impending trouble. Unquestionably, however, another factor not to be overlooked in explaining the longevity of the period is the persistent success of American agriculture during these recent years, — a success which, unlike that of previous periods, has for the time being depended neither upon the abundance of the American crops nor upon the failure of the crops abroad. There have been no serious crop failures in Europe since 1897, and upon several occasions since then one or another of the American crops has fallen short; yet the prosperity of American agriculture not only has remained unimpaired, but has actually advanced to ever higher and higher levels. With regard to two of the agricultural staples of the country, cotton and wheat, the demand throughout the world has from all appearances increased more rapidly during the past half-dozen years than the output, so that in several cases, even when the harvests have shown a decline in bulk, their aggregate value has expanded.[1] Whether the increasing demand is the consequence of general prosperity or not is a matter of question, but certain it is that the world's consumption of these staples for some reason or other has taken on new dimensions, and, notwithstanding an increasing output, less has been produced than could have been sold with a profit. The prices of cotton and wheat during recent years have risen in consequence to levels not witnessed before for a generation, and one has to turn back to the year 1883 to find their prices averaging as high as during the past two years, 1904 and 1905. In fact, both the cotton and the wheat crops of the last three or four years have aggregated a value not far from double those of similar years a decade ago.

[1] See charts.

The agricultural situation of to-day is novel in many respects. In previous trade cycles of the past forty years, agricultural conditions in the West and the South have often tended to act as



drags upon the resources of the industrial and commercial centers of the East. The farming population was poor and heavily mortgaged. They had to work very largely on credit, and to wait until the harvest before making the current year's expenditures. They had not means sufficient to harvest their own crops, much

less to carry over stocks from the superabundant years to meet an anticipated shortage. Under such circumstance any considerable diminution in the crops was very apt to cause serious reaction or to prolong an existing depression. But during these late years the great farming areas, whether of the West or South, have become financially independent and prosperous as never before. Their people have lifted many of their mortgages, and now are lenders where before they were borrowers. They are much better able to cope with any temporary shrinkage in their harvests or to take care of any temporary surplus. As a matter of fact, the agricultural situation to-day, instead of being an aggravating influence in a general decline, as was the case ten or twelve years ago, has become the bulwark upon which the mercantile and financial interests of the country rely to break the force of every threatened reaction.

We have seen how all the great movements of business expansion in America during recent times have been initiated by conditions of agricultural success. It has also been true that most of the turning-points in the other direction have been preceded by agricultural failure. The year 1872, which marked the beginning of the first long period of retrenchment during the years under consideration, was preceded in the autumn of 1871 by a serious shrinkage in the cotton crop and by an appreciable decline in the crops of corn and wheat. The year 1882, which marks the beginning of the next commercial decline, ensued upon a destructive drought that extended over most of the United States and caused a shrinkage in all of the staple crops. The crop failures of the autumn of 1881 cut down freight earnings the following year by some $45,000,000, reduced our export trade by $150,000,000, converted a favorable into an unfavorable trade balance, and resulted in the export of $32,000,000 of gold before the following June. They thus furnished the initiatory impulse for the long decline of the middle eighties. Turning to the early nineties, we have seen how in this complicated period the marvelously favorable crop conditions in 1891 had failed, because of political uncertainties, to stimulate a repetition of the prosperity of the resumption period. In the first months of 1892 they succeeded

in swelling the tonnage of the railroads and the exports of domestic produce to tremendous volume, and so reanimated general business temporarily; but in the following autumn (1892) the crops shrank back to their former proportions. The harvests of wheat and corn and cotton all registered a decline; and, with the impetus of agricultural success removed, the country's business entered rapidly upon the downward course which culminated in the memorable crisis of 1893. All three of these periods of revulsion were preceded by, if not altogether caused by, crop shortage.

Looking back over the sweep of economic events in the United States during the past four decades, while one must admit that the influence of the crops has not always been the predominant factor in business, one can readily perceive their usual and very extended significance. The relation between agricultural success or failure and the prosperity or decline of general business has not, to be sure, proved as close and inevitable as Jevons and certain other students of crises have been inclined to believe. Crises have not ensued invariably and immediately upon every crop failure, nor have eras of upbuilding followed with clocklike regularity after every bountiful harvest. Yet one cannot review the past forty years without observing that the beginnings of every movement toward business prosperity and the turning-points toward every business decline (movements which frequently, it will be remarked, have antedated the actual outbreak of crises by several years) were closely connected with the outturn of the crops. In other words, the presumptive relationship, for the existence of which we found abundant reason earlier in the paper, we find to be a matter of experience and historical fact.

THE AMERICAN CROP FOR THIRTY-FIVE YEARS

Year[1]	Cotton	Wheat	Corn
	Millions of bales[2]	*Millions of bushels*	*Millions of bushels*
1870	4·35	235	1094
1871	2.97	230	991
1872	2.93	249	1092
1873	4·17	286	932
1874	3.83	308	850
1875	4.63	292	1321
1876	4·47	289	1283
1877	4·77	364	1342
1878	5.07	420	1388
1879	5.76	448	1547
1880	6.60	498	1717
1881	5·45	383	1194
1882	6.94	504	1617
1883	5·71	421	1551
1884	5.70	512	1795
1885	6.57	357	1936
1886	6.50	457	1665
1887	7·04	456	1456
1888	6.93	415	1987
1889	7·31	490	2112
1890	8.65	399	1489
1891	9.03	611	2060
1892	6.70	515	1628
1893	7·54	396	1619
1894	9.90	460	1212
1895	7·15	467	2151
1896	8·75	427	2283
1897	11.1	530	1902
1898	11.27	675	1924
1899	9.43	547	2078
1900	10.38	522	2105
1901	10.68	748	1522
1902	10.72	670	2523
1903	10.01	637	2244
1904	13·55	552	2467
1905		693	2707

[1] The year quoted is the year in which the crop was raised; for example, in the case of cotton, the year beginning September 1.

[2] The bales have tended to grow heavier, and have varied from 440 to 490 lb.

THE INFLUENCE OF FARM MACHINERY ON PRODUCTION AND LABOR

By H. W. Quaintance

(From the Publications of the American Economic Association)

PART I

Historical Survey

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AS TO just when the modern machine methods came into general use authorities differ and will, doubtless, continue to differ. The census statistician for agriculture makes the statement that "the year 1850 practically marks the close of the period in which the only farm implements and machinery, other than the wagon, cart, and cotton gin, were those which, for want of a better designation, may be called implements of hand production."[1] This opinion is in substantial agreement with that of a recent German writer.[2]

The cotton gin was not invented until nearly twenty years after the Declaration of Independence was signed, and the wagons and carts of that time were crude affairs in comparison with those of the present day.[3] "The Massachusetts farmer who witnessed the Revolution plowed his land with the wooden bull-plow, sowed his grain broadcast, and, when it was ripe, cut it with a scythe,

[1] Twelfth Census, Agriculture, Vol. I, p. xxix.

[2] Andererseits ist der landwirtschaftlichen Maschinenentwickelung vor dem neunzehnten Jahrhundert wenig Bedeutung beizumessen, da ihre praktische Anwendung mit ihr nicht Hand in Hand gegangen war. Daher kommt es auch, dass die Maschinen der vorigen Jahrhunderte alle mehr oder weniger unvollkommen blieben. Die Anwendung landwirtschaftlicher Maschinen erfolgte erst in grösseren Masstab um die vierziger Jahre dieses Jahrhunderts.— Bensing, "Einfluss der landwirtschaftlichen Maschinen," p. 16

[3] Mass. Agr. Report, 1853, p. 422.

and thrashed it out on his barn floor with a flail."[1] The poor whites of Virginia, in 1790, lived in log huts "with the chinks stuffed with clay; the walls had no plaster; the windows had no glass; the furniture was such as they had themselves made. Their grain was thrashed by driving horses over it in the open field. When they ground it they used a rude pestle and mortar, or, placed in the hollow of one stone, they beat it with another."[2]

In parts of Pennsylvania, in Delaware, the eastern shores of Maryland and Virginia, and, we believe, in Rhode Island grain was generally trodden out by oxen or horses as the more expeditious method [even later than the year 1800]. Horses were preferred for this work. A crop of three thousand bushels could thus be threshed and secured . . . in ten days. . . . The treading floors were from forty to one hundred and thirty feet, more commonly sixty to one hundred feet in diameter with a path twelve to fourteen feet wide near the periphery upon which the grain was laid. The horses were led round at a slow trot in platoons equidistant from each other. . . . The floors were sometimes removed from field to field, but permanent floors made hard and smooth, and kept so by careful use, were preferred. They were commonly fenced round, sometimes with an outer and inner fence.[3]

Of the Georgia estates in 1790, it is said: Their "chief products were negroes, rice, and tobacco. . . . The staple was tobacco, and this was cultivated in the simplest manner with the rudest of tools. Agriculture as we now know it can scarcely be said to have existed. The plow was little used. The hoe was the implement of husbandry. Made at the plantation smithy, the blade was ill-formed and clumsy; the handle was a sapling with the bark left on. . . . Few roads were ever marked by the tires of a four-wheeled wagon or a tumbrel. When the tobacco was ready for the inspector's mark, stout hogsheads were procured, the leaves packed in, the heads fastened in, a shaft and a rude axle attached, and, one by one, they were rolled along the roads for miles to the tobacco-house nearest by."[4] Michaux, who made a journey through the United States in 1802 for the express purpose of studying agricultural conditions, in speaking of North Carolina, says:

[1] McMaster, History of the People of the United States, Vol. I, p. 18.
[2] *Ibid.*, Vol. II, p. 14.
[3] Eighth Census, Preliminary Report, p. 95.
[4] McMaster, History of the People of the United States, Vol. II, p. 4.

Throughout the whole of the low country the agricultural labors are performed by negro slaves, and the major part of the planters employ them to drag the plow; they conceive the land is better cultivated and calculate besides that in the course of a year a horse, for food and looking after, costs ten times more than a negro, the annual expense of which does not exceed fifteen dollars.[1]

Even so late as the year 1812, the French settlers in southern Illinois were using plows "made of wood with a small point of iron fastened upon the wood by strips of rawhide, the beam resting upon an axle and small wooden wheels. They were drawn by oxen yoked by the horns by raw leather straps, a pole extending back from the yoke to the axle." Small plows for plowing between the rows of corn were not introduced until about the year 1815. "They used carts that had not a particle of iron about them."[2]

The Cary plow, which seems to have been a fair type of the plows used during later colonial times and until well into the nineteenth century had a "wrought-iron share, wooden landside and standard, and wooden moldboard plated over with sheet iron or tin and short upright handles."[3] The Old Colony plow, which was still in general use in the Eastern states in 1820, "had a ten-foot beam and a four-foot landside," and it made the "furrows stand up like the ribs of a lean horse in the month of March."[4]

One plow, in particular, is deserving of notice. It is the plow which Daniel Webster, in the year 1836, designed and helped to make for the especial purpose of clearing up a certain field on his farm at Marshfield, Massachusetts.[5] It was designed to cut a furrow from 12 to 14 inches deep and has been described as being "12 feet long from the bridle (i.e. clevis) to the tip of the handles; the landside is 4 feet long; the bar and share are forged together; the moldboard is of wood with straps of iron; breadth at heel of moldboard to landside, 18 inches; the spread of the moldboard was 27 inches; the lower edge of the beam was 2 feet 4 inches above the sole; width of share 15 inches." With oxen to draw the plow

[1] F. A. Michaux, Travels in America in 1802, p. 291.
[2] Mass. Agr. Report, 1873–1874, p. 18.
[3] Eighth Census, Agriculture, p. xviii; Mass. Agr. Report, 1853, p. 422.
[4] U. S. Dept. Agr., Year Book, 1899, p. 315.
[5] A picture of this plow is given in Roberts, Fertility of the Land, p. 49.

and several men to help him, Webster held the handles and cleared his stump patch. Speaking of his work with this plow, Webster is reported to have said:

> When I have hold of the handles of my big plow in such a field as this, with four yoke of oxen to pull it through and hear the roots crack and see the stumps all go under the furrow, out of sight, and observe the clean mellow surface of the plowed land, I feel more enthusiasm over my achievement than comes from my encounters in public life at Washington.[1]

Webster's plow, although no doubt somewhat exceptional by reason of its massiveness, as became the man, is, in fact, only an illustration of what was an everyday affair, for the blacksmith shops were the plow factories of that time, and farmers were accustomed to having their plows made to order.

It must not be supposed, however, that inventors of the regular type were unmindful of the needs of the farming class. The Napoleonic wars, in particular, stimulated the demand of Europe for American agricultural products, and our Patent Office records furnish ample evidence of the efforts of inventors to supply better means of cultivating and caring for such products.[2] Whitney's cotton gin, patented in 1794, was only one of many devices designed to promote the business of the farmer. At least two patents for grain-thrashing machines were issued as early as the year 1791.[3] A patent for a corn-planting machine was issued in 1799[4] and another for a grain-cutting machine in 1803.[5]

But the only one of these early inventions, other than the cotton gin, which seems to have really foreshadowed its successor of the present day, was a cast-iron plow invented by Charles Newbold of Burlington County, New Jersey. Sometime between 1790 and 1796, Newbold had a plow cast, under his direction, at the Hanover furnace, in Burlington County, New Jersey. The plow was cast all "in one peice," and on June 17, 1797, he was granted a patent for his invention.[6] He appears to have used this first plow

[1] N.Y. Agr. Report, 1867, p. 484.
[2] Eighth Census, Preliminary Report, p. 96.
[3] *Ibid.*
[4] U. S. Agr. Report, 1870, p. 401.
[5] Eighth Census, Agriculture, p. xx.
[6] U. S. Agr. Report, 1870, p. 395; N.Y. Agr. Report, 1867, p. 448.

on his own land with much success; but, financially, his enterprise was a failure. The farmers were opposed to "new-fangled notions" and contended that the use of cast iron "poisoned the land, injured its fertility, and promoted the growth of weeds." Finally the point of the plow was broken off. It was never repaired, and the plow is now in the Museum of the New York State Agricultural Society at Albany, New York.[1] Eventually, however, the prejudice against cast-iron plows was overcome. Better patterns were devised. They were adopted by the people, and so late as the year 1850, according to the census statistician for agriculture, "the old cast-iron plows were in general use. Grass was mowed with the scythe, and grain was cut with the sickle or cradle and thrashed with the flail." [2]

The prototype of the modern grain reaper had indeed appeared prior to 1850.[3] A similar statement might, doubtless, be made concerning certain other inventions for which patents had been issued; but all of these, like the submarine boat and the flying machine of the present day, were in too imperfect a state, too complex, or too expensive to meet the demands of the time. Whitney's cotton gin and Newbold's cast-iron plow may therefore be accepted as the only ones of the great inventions which, up to 1850, had become thoroughly incorporated into the agricultural industry of this country.

Just how soon after 1850 the various other labor-saving machines became essential factors in the business of farm work it would be impossible to tell. Reaping machines were fairly well developed; but the complexity of the machines and the ignorance of the farmers were serious hindrances to their general use.[4] It

[1] N. Y. Agr. Report, 1867, pp. 446, 448.

[2] Twelfth Census, Agriculture, Vol. I, p. xxix.

[3] Obed Hussey's machine was patented in 1833; C. W. McCormick's, in 1834 (Eighth Census, Agriculture, p. xxi).

[4] I use for reaping only the scythe and cradle. . . . Perhaps a still greater benefit may be found in the substitution of reaping machines, which, even now, are used by most of the good farmers of my neighborhood. But because of their great liability to get out of order, the difficulties of working them, and especially my own ignorance of machinery, I have feared to attempt the use of reaping machines. — Letter of Edmund Ruffin, a Virginia farmer, from Patent Office Reports, 1850–1851, p. 104

is only in very recent years that agricultural implement dealers have ventured to send out any reaping machine without sending also an expert operator to instruct the purchaser in its use.[1]

The two-horse corn cultivator began to come into use in 1861.[2] There are evidences, too, that other farm machines were coming into use at that time.[3] But during the Civil War, from 1861 to 1864, the minds of inventors as well as of the working classes were given to other matters.[4]

From 1866 onward, progress in the invention and use of agricultural machinery has been by more rapid strides, yet even so late as the year 1870 the editor of the "New American Farm Book"[5] questioned the advisability of using the large threshing machines because of the "great loss of grain and enormous waste of straw" which were apt to result, and cautioned his readers particularly against "employing itinerate threshers, who go about the country to do work." For the "moderate farmer" he advised the use of "a small single- or double-horse machine or hand thresher" as the more economical and as permitting the work to be done "in winter, where there is more leisure for it."

To-day the American farmer who does not use a machine of some sort is indeed far behind the times. The farmers of the Far West have profited most of all. There, on the California and Oregon farms, may be found fifty-horse-power traction engines in operation, each one dragging "sixteen ten-inch plows, four six-foot harrows, and a press drill for planting seed wheat. In this way one such engine performs the triple work of plowing, harrowing, and planting, all in one operation. The saving of time is so great that one machine can plant with wheat, from fifty to seventy-five acres in a single day, mounting hilly and rough ground just as easily as when passing across dead levels."

[1] Report of the Industrial Commission, Vol. XI, p. 78.

[2] *Illinois Farmer*, 1861, p. 178.

[3] Eighth Census, Preliminary Report, p. 99.

[4] The Patent Office records through the period of the Civil War show a marked decrease in the number of patents issued for agricultural implements and machines and a very great increase in the number of patents issued for firearms and other weapons of warfare.

[5] R. A. Allen, New American Farm Book (1870), p. 150.

When the grain is ripe, a harvesting machine is, by the same means, pulled across the field.

> Its cutters are often twenty to twenty-six feet wide. . . . When the cutters have performed their work, automatic rakers gather in the grain stalks and carry them to rows of knives where they are at once headed. Then, in the same operation, the wheat is threshed out, cleaned and sacked, and behind the great combination harvester there is left a trail of sacked wheat ready for the market. Another traction engine with a train of a dozen cars follows in the wake of the thresher and harvester, gathering up the wheat and carting it to the granary. In this manner fully seventy acres and more of wheat land are harvested in one day.[1]

With the aid of these engines the work of "plowing, cultivating, seeding, and harvesting on farms of a thousand acres in extent" may be done by half a dozen men in "much less time than a whole army of employees could do the work on a farm of half the acreage."[2] For the profitable use of such vast machine power, large fields are a self-evident necessity.

The farm machines in use in the Central States are less massive and of a more varied nature, and yet, in the rate of progress which they show, are no less wonderful than those above described. Instead of a hoe for covering seed corn dropped by hand, the farmer now uses a check-row planter drawn by horses and depositing the seed at regular intervals so that the rows may be cultivated with equal facility either in the direction of the planting or across. As a means of cultivating the corn, hoes are now laid aside, and in their stead the farmer quite commonly uses a riding plow. Steam-power corn-huskers and corn-shellers are found. Instead of the old hand-method of shelling corn by scraping the ears against the handle of a frying pan or the blade of a shovel, by which means hardly six bushels could be shelled in a day, the farmer may now have his corn shelled at the rate of a bushel a minute, and the machine which does the work will also "carry off the cobs to a pile or into a wagon and deliver the corn into sacks."[3]

[1] George E. Walsh, "Steam Power for Agricultural Purposes," *Harper's Weekly*, Vol. XLV, p. 567.

[2] *Cassier's Magazine*, Vol. XIX, p. 139, and *Harper's Weekly*, Vol. XLV, p. 567.

[3] U. S. Dept. Agr., Year Book, 1899, pp. 316–318, 332.

Mowing machines, horse hay-rakes, tedders, and stackers have revolutionized the work of making hay. It formerly required eleven hours of man-labor to cut and cure a ton of hay. Now the same work may be done in one hour and thirty-nine minutes; while the cost for the required man-labor has been decreased from $83\frac{1}{3}$ to $16\frac{1}{4}$ cents per ton.[1] Potato planters and diggers, feed choppers and grinders, manure spreaders, and ditch-digging machines are only a few of many labor-saving devices now common on the farms in the Central States. There is hardly a phase of farm work that has not been essentially changed by the introduction of some new implement or machine.

Some idea of the great development which has taken place along these lines may be gained from a consideration of the value of the output of agricultural implements and machinery as reported to the Census Office. For purposes of comparative study, the figures must be taken subject to heavy allowances, because, as pointed out by Mr. George K. Holmes,[2] the prices of farm machinery have "declined to an enormous extent," and this, too, in spite of the fact that the later machines are more efficient, more durable, more readily operated, lighter, and stronger.

The total value of agricultural implements and machines manufactured during the several census years, as reported to the Census Office, is as follows:[3]

Year	Total for United States
1900	$101,207,428
1890	81,271,651
1880	68,640,486
1870	42,653,500[4]
1860	20,831,904
1850	6,842,611

[1] U. S. Dept. Agr., Year Book, 1899, p. 332.

[2] Twelfth Census, Manufacturing, Vol. IV, p. 353.

[3] *Ibid.*, p. 344.

[4] The amount as given in the Census Report has been reduced to a gold basis (see Tenth Census, Manufactures, p. 1).

PART II

Machinery and Production

* * * * * * * * *

Concerning the Increase in Cultivated Area per Farm Worker and the Greater Effectiveness of Farm Workers when aided by the Use of Machinery, as shown by Reports of the Census Office

The Census Office statistician for agriculture presents a table as follows:[1]

Items	1900	1890	1880
Number of males in agriculture . .	8,771,181	7,787,539	7,075,983
Number of horses, mules, and asses .	20,099,826	17,264,999	12,170,296
Acres of land in specified crops . .	272,304,111	214,523,412	164,830,442
Average number of acres to one male worker	31.0	27.5	23.3
Average number of acres to one horse	13.5	12.4	13.5
Average number of horses to one male worker	2.3	2.2	1.7

Farther on, speaking with reference to this table, he says:

The number of acres of leading crops per male worker steadily increased, while the number per working animal was substantially the same in 1900 as in 1880. The increase in the productiveness of man's labor, therefore, is secured by the increased utilization of the power of the horse and mule in driving farm machinery. The figures of the table indicate two important changes in the twenty years. One of these appears in the increase in the number of horses to each male worker from 1.7 to 2.3, a gain of about 35 per cent; the other is the increase in the number of acres cultivated to each male worker from 23.3 to 31.0, or about 34 per cent. From these figures it appears that in the last twenty years, by the aid of machinery and the substitution of horse power for hand labor, the effectiveness of human labor on farms has been increased to the extent of about 33 per cent.

The statement that there has been an increase in the number of horses and of acres cultivated, to each male worker, is mathematically correct enough, but it gives the impression that the

[1] Twelfth Census, Agriculture, Vol. I, p. xxxi.

farmers have both increased in numbers at the same rate as people engaged in other occupations and have expanded their holdings, which is not at all true. It will be noted that the number of horses per acre of cultivated land was the same in 1900 as in 1880. Horses and crop acreage have therefore increased at an equal rate. Either these have increased at an extraordinary rate or the third term (male workers) has increased at less than the normal rate. It will be shown farther on (pp. 58–60) that this latter hypothesis is the true one. The increased crop acreage per worker is, therefore, to be looked upon not so much as an expansion of farm holdings as a contraction in the number of workers.

The average number of acres in all farm crops per farm worker (agricultural laborers, farmers, planters, and overseers) — male and female — as returned by the censuses of 1880, 1890, and 1900 was as follows:

	1900	1890	1880
United States[1]	27.0	25.9	21.8
North Atlantic division	21.3	21.2	21.7
South Atlantic division	13.3	14.2	13.8
North Central division	45.2	40.4	31.9
South Central division	16.5	15.9	14.2
Western division	39.6	33.7	34.2

Presented from the basis of a common denominator, the data shown in the foregoing table appear as follows:

	Base	1880	1890	1900
United States	21.8	100	118.7	123.8
North Atlantic division	21.7	100	97.7	98.0
South Atlantic division	13.8	100	102.9	98.6
North Central division	31.9	100	126.6	141.7
South Central division	14.2	100	111.9	116.7
Western division	34.2	100	98.5	115.8

[1] In the various tables presented in this essay the term "United States" is used to signify only the five principal geographical divisions taken collectively. Data from the Census Reports have been modified, when necessary, to make them conform to such restricted meaning.

Such calculations are good as indicating the greater crop area which the average person finds it profitable to tend when aided by machine power. One needs to be on guard, however, against taking them as indexes of the greater effectiveness of man-labor, due to the use of machinery; for, obviously, they take no account of the character of the cultivation — whether intensive or extensive. Construed as indexes of effectiveness, these figures show that the effectiveness of the average worker in the North Central, South Central, and Western divisions has been much increased during the period from 1880 to 1900, while that of the average worker in the North Atlantic and South Atlantic divisions has actually become less. Such a conclusion would be clearly wrong. There is good reason for believing that the effectiveness of the average farm worker in each of these divisions,[1] and even in the New England States alone,[2] was, in all likelihood, very much greater in 1900 than in 1880.

If we take the value of product per person engaged in agriculture as an index of effectiveness under the methods in use in 1880 and in 1900, we shall find that the effectiveness of the average worker in the United States was greater, by nearly 60 per cent,[3] in 1900 than in 1880.

The census of 1870 did not report crop acreage at all, and the value of agricultural products was reported in connection with the value of betterments, so that no showing of the relative effectiveness of agricultural workers, in 1870 and in 1900, based either on crop acreage or on value of products, can be made; but judged by the quantity of cereal product reported, per person engaged in farm work (i.e. farmers, planters, overseers, and agricultural laborers), the effectiveness of the average farm worker in 1900 was greater than in 1870 by nearly 86 per cent.[4] The data at hand do not appear to admit of any similar showing as between the year 1900 and any date prior to 1870.

[1] See page 82. [2] See page 54.

[3] Exactly 58.4 per cent. For value of product per person engaged in agriculture in 1880 and 1900, see table on page 82.

[4] Exactly 85.8 per cent. The cereal product per worker, as above, in 1870, was 236.5 bushels; in 1900 it was 439.6 bushels.

The Greater Effectiveness of Farm Workers when aided by the Use of Machinery, as shown by Investigations of the Department of Labor

The Thirteenth Annual Report of the Department of Labor gives the results of an extended investigation concerning production by hand and by machine methods, and affords the means for a reliable estimate of the influence of machine power. That portion devoted to agricultural operations shows in detail, for example, how many persons were ordinarily required for the production, by hand or by machine methods, of a given quantity of barley; what separate operations were necessary in that production, as plowing, sowing, harrowing, etc.; what time was required for each operation, what tools or machines, if any, or other helps were used, and the money cost of each operation.

From the summary given on pages 24–25 of that report it appears that the man-labor power requisite for the production of thirty bushels of barley, by the methods commonly in use in the season of 1829–1830, amounted to 63 hours and 35 minutes. The man-labor power required for accomplishing the same result, by the methods commonly in use in the season of 1895–1896, is shown to have been only 2 hours and 42.8 minutes. From such data, the barley crop of 1896 being known, we may readily determine not only what amount of man-labor was requisite for the production of that crop by the means commonly in use at that time, but also how much barley that same labor power could have produced by the means commonly in use in the season of 1829–1830. The difference between the quantity actually produced in the season of 1895–1896 and the quantity which the labor power required for the work of that season could have produced by the earlier hand methods will represent the greater product due to the use of machinery. The crediting of the whole of this difference to the use of machinery is, doubtless, crediting it with too much. Credit is due, also, to better methods of cultivation, to pulverization of soils, to the use of fertilizers, to irrigation, rotation of crops, better seed, etc. These are not machine forces, although they are largely dependent upon the use of machinery, as the use

of machinery is, in some degree, dependent upon them. But to attempt the separation of these credits would be much like attempting to determine which blade of a pair of shears does the cutting. Moreover, these various other forces play, comparatively, a very incidental and subsidiary part. I believe that the following pages will justify this opinion, and venture, therefore, to disregard whatever inaccuracy there may be involved in the statement and to say that the entire increased product is due to the use of machinery.[1]

It will be sufficient, for purposes of illustration, to consider only a few of the principal crops in the production of which machinery has become a recognized factor. The crops selected for this purpose, together with the time of man-labor requisite for producing stated quantities of each crop by hand and by machine methods, as reported by the Department of Labor, are shown in the following table:

Unit Number[2]	Name and Quantity of Crop Produced and Description of Work Done	Year of Production		Time Worked			
		Hand	Machine	Hand		Machine	
				Hr.	*Min.*	*Hr.*	*Min.*
3	Barley: 30 bushels (1 acre) barley	1829–1830	1895–1896	63	35.0	2	42.8
9	Corn: 40 bushels (1 acre) yellow corn, husked; stalks left in field	1855	1894	38	45.0	15	7.8
10	Cotton: by hand, 750 pounds; by machine, 1000 pounds (1 acre) seed cotton . . .	1841	1895	167	48.0	78	42.0
12	Hay: harvesting 1 ton (1 acre) timothy hay	1850	1895	21	5.0	3	56.5
13	Oats: 40 bushels (1 acre) oats	1830	1893	66	15.0	7	5.8
16	Potatoes: 220 bushels (1 acre) potatoes	1866	1895	108	55.0	38	
17	Rice: 2640 pounds (1 acre) rough rice	1870	1895	62	5.0	17	2.5
18	Rye: 25 bushels (1 acre) rye	1847–1848	1894–1895	62	58.9	25	10.0
26	Wheat: 20 bushels (1 acre) wheat.	1829–1830	1895–1896	61	5.0	3	19.2

[1] For the purpose of this discussion I shall use the term "machinery," generally, to signify not only machines, but also tools or implements, and other man-labor-saving forces when used as essential adjuncts or parts of machines. For example,

These several crops for the years covered by the data concerning production by the aid of machine power were as follows :[1]

	Crop of	Amount Produced
Barley	1896	69,695,223 bushels
Corn	1894	1,212,770,052 bushels
Cotton	1895	7,161,094 bales (500-pound)
Hay	1895	47,078,541 tons
Oats	1893	638,854,850 bushels
Potatoes	1895	297,237,370 bushels
Rice	1896	168,685,440 pounds
Rye	1895	27,210,070 bushels
Wheat	1896	427,684,346 bushels

The number of days' work of man-labor requisite for producing the foregoing specified crops by the aid of machine power, together with the quantity of those several crops which the same labor power could have produced by the earlier hand method, are shown in the following :

	Crop of	Days' Work of Man-Labor Required	The Same Labor Power	
			By methods of	Could have produced
Barley	1896	630,354	1829–1830	2,972,839 bushels
Corn	1894	45,873,027	1855	473,528,022 bushels
Cotton	1895	28,178,904	1841	2,518,972 bales
Hay	1895	18,556,791	1850	8,801,640 tons
Oats	1893	11,334,266	1830	68,433,307 bushels
Potatoes	1895	5,134,100	1866	103,703,321 bushels
Rice	1895	108,889	1870	46,303,587 pounds
Rye	1895	2,739,147	1847–1848	10,872,795 bushels
Wheat	1896	7,099,560	1829–1830	23,245,490 bushels

Finding next the difference between the quantities of the several crops actually produced under machine methods, in the years

horses, when used to draw a reaping machine, will be considered as much a part of the machine as an engine and boiler would be, if used for the same purpose.

[2] The "unit numbers" here given are the unit numbers made use of in the Thirteenth Annual Report of the Department of Labor, from which the data in the table are taken. The numbers are repeated here only for purposes of reference.

[1] U.S. Dept. Agr., Year Book, 1900.

indicated, and the quantities which the labor power requisite for their production with the aid of machines could have produced had it been devoted to the production of those same crops by hand methods, we have the following:

	Crop of	Due to Use of Machinery	Per Cent of Actual Product
Barley	1896	66,722,384 bushels	95.7
Corn	1894	739,242,030 bushels	60.9
Cotton	1895	4,642,122 bales	64.8
Hay	1895	38,276,901 tons	81.3
Oats	1893	570,421,543 bushels	89.2
Potatoes	1895	193,534,049 bushels	65.1
Rice	1895	122,381,853 pounds	72.5
Rye	1895	16,337,275 bushels	60.0
Wheat	1896	404,438,856 bushels	94.5

The increased effectiveness of man-labor power when aided by the use of machinery, as indicated by these figures, varies from 150 per cent in the case of rye to 2244 per cent in the case of barley. From this point of view a machine is "not a labor-saving" but rather a "product-making" device.[1] Taking the per cent of labor saved (see p. 52), as indicating the average proportion of these crops due to the use of machinery, it appears that the quantity of product is almost five times as great, per unit of labor, as it formerly was.

The Cost of Production

Touching the difference in the cost of production per unit of product, the Thirteenth Annual Report of the Department of Labor furnishes some data that will well repay a somewhat extended consideration. It should be observed, however, that these data with reference to the cost of production, although collected at the same time and, doubtless, with the same care as the data already taken from that report, are, nevertheless, for the purposes of generalization, far less reliable. The average workman will perform the same quantity of work in a day, whether he works in

[1] Hadley, Economics, p. 338.

one locality or in another; but rates of wages vary with localities and may vary both absolutely and relatively with differences in time. With this qualification in mind, it will be safe to take up the consideration of the data.

Including the crops above considered, the report of the Department of Labor gives detailed information concerning the cost of production, by hand and by machine methods, of twenty-one different crops. The table on the next page gives the results of the several investigations in this particular, arranged in the order of the greatest saving in cost of production by machine as compared with hand methods.[1]

The per cent column of this table shows that, for the most part, there has been a very great decrease in the cost of producing these various crops. The median is 39.92 per cent, but this

[1] In the production of peas and in both tobacco crops there has been an increase in the cost. This increase is not, however, from the use of machinery in the production of these crops, but rather from the lack of it. In the case of tobacco (unit 22), for example, in which there has been the greatest increase in cost, the hand-method production was with the aid of the following: wagon, spades, hoes, rakes, wooden-moldboard plows, harrow, turnplow, wooden pegs for setting plants, plow for cultivating, and tobacco knives. The total extent of the machinery used in the production of this crop by machine methods was as follows: plow, harrow, rakes, hoes, disk harrow, drag, wagon and barrels, transplanter, double-shovel plow, tobacco knives, wagon and racks, and screw racket prize (Thirteenth Annual Report, Dept. Labor, p. 464). It must be evident at once from a comparison of these items that the difference in machinery cannot account for the difference in cost of production. The cause of the increased cost in the production of tobacco and peas (units 15, 22, and 23) was a higher rate of wages. In the case of peas, wages rose from 62½ cents to $1 per day. In the case of tobacco (unit 22), wages rose from 30 cents per day to $20 and $23 per month; in unit 23, the rise of wages was from 75 cents to $1 per day. It will be readily understood that when there is little or no change in the methods of production a rise in the rate of wages must cause a rise in the total cost of production.

The "hand method" of production, as explained in the report of the department, "should not be construed to mean a method whereby a product is made entirely by the unaided hand and absolutely without the use of machines, but rather as the primitive method of production which was in vogue before the general use of automatic or power machines" (Thirteenth Annual Report, Dept. Labor, p. 11). Similarly, it should be observed in this connection that machine method does not necessarily imply that machines are used, but only that the work was done by the most approved methods practiced in more recent years.

For a table of wages under hand and machine methods, see page 74.

number is clearly too low, for the crops in which machinery is most used are principally in the upper part of the table.

COST OF PRODUCTION BY HAND AND BY MACHINE METHOD

Unit Number*	Name and Quantity of Crop Produced	Year of Production		Cost		Per Cent Decrease
		Hand	Machine	Hand	Machine	
3	Barley: 30 bu. (1 acre) . .	1829–1830	1895–1896	$3.88	$1.06	72.62
27	Wheat: 20 bu. (1 acre) . .	1829–1830	1895–1896	4.00	1.12	71.98
5	Broom corn: 1 ton (3 acres)	1860	1895	90.33	25.37	71.92
17	Rice: 2640 lb. (1 acre) . .	1870	1895	7.20	2.08	71.09
21	Sweet potatoes: 105 bu. (1 acre)	1868	1895	34.30	10.29	70.00
12	Hay: harvesting 1 ton (1 acre) timothy hay	1850	1895	1.92	.63	66.95
8	Corn: 40 bu. (1 acre) yellow corn, shelled; stalks, husks, and blades cut into fodder	1855	1894	16.34	6.62	59.49
20	Sugar cane: 20 tons (1 acre)	1855	1895	40.32	16.37	59.40
13	Oats: 40 bu. (1 acre) . . .	1830	1893	3.85	1.60	58.47
19	Strawberries: 4000 qt. (1 acre)	1871–1872	1894–1895	231.28	97.92	57.66
24	Tomatoes: 150 bu. (1 acre)	1870	1895	36.62	15.88	56.64
16	Potatoes: 220 bu. (1 acre)	1866	1895	13.18	5.97	54.68
26	Wheat: 20 bu. (1 acre) . .	1829–1830	1895–1896	3.83	2.03	47.11
11	Hay: harvesting and baling 1 ton (1 acre) timothy hay	1860	1894	3.19	1.91	39.92
2	Apple trees: 10,000 (1 acre) thirty-two months, from grafts	1870–1872	1893–1895	200.00	121.00	39.50
4	Beets: 300 bu. (1 acre) . .	1850	1895	32.30	20.01	38.05
9	Corn: 40 bu. (1 acre) yellow corn, husked; stalks left in field	1855	1894	5.03	3.31	34.20
7	Carrots: 30 tons (1 acre) . .	1850	1895	38.71	37.21	29.72
14	Onions: 250 bu. (1 acre) . .	1850	1895	32.56	23.89	26.64
1	Apple trees: 10,000 (1 acre) thirty-two months, from grafts	1869–1871	1893–1895	202.00	150.69	25.41
10	Cotton†: by hand, 750 lb.; by machine, 1000 lb. (1 acre)	1814	1895	6.15	4.71	23.42
18	Rye: 25 bu. (1 acre)	1847–1848	1894–1895	5.25	4.30	18.10
25	Turnips: 350 bu. (1 acre)	1855	1895	25.63	23.36	8.88
6	Carrots: 30 tons (1 acre) . .	1855	1895	30.61	29.96	2.13
						Per Cent Increase
15	Peas: 20 bu. (1 acre) field peas	1856	1895	6.66	6.76	1.56
23	Tobacco: 1500 lb. (1 acre) Spanish seed leaf	1853	1895	25.85	27.99	8.28
22	Tobacco‡: by hand, 1200 lb.; by machine, 1250 lb. (1 acre)	1844	1895	.74	2.67	261.42

* See footnote 2, p. 45.

The data requisite for a similar showing with respect to all farm crops and for any certain period are, I think, not to be had; but we can apply the data presented in the foregoing table to the principal crops of the year 1899, as reported by the Twelfth Census.[1] The results are as follows:

THE COST OF PRODUCING CERTAIN CROPS OF THE YEAR 1899, BY HAND AND BY MACHINE METHOD

Name[2]	Quantity Produced	Cost of Production	
		Hand method	Machine method
Barley (3)	119,634,877 bushels	$15,472,777	$4,227,098
Broom corn (5)	90,947,370 pounds	4,107,576	1,153,650
Corn (9)	2,666,440,279 bushels	335,304,865	220,647,933
Cotton (10)	9,534,707 bales	58,638,448	44,898,469
Hay (12)	84,011,299 tons	161,301,694	52,927,118
Oats (13)	943,389,375 bushels	90,801,227	37,735,575
Onions (14)	11,791,121 bushels	1,535,675	1,126,759
Peas (15)	9,440,269 bushels	3,143,609	3,190,810
Potatoes (16)	273,328,207 bushels	16,373,935	7,417,133
Rice (17)	283,722,627 pounds	773,788	223,539
Rye (18)	25,568,625 bushels	5,369,411	4,397,803
Sugar cane (20)	6,441,578 tons	12,986,221	5,272,431
Sweet potatoes (21)	42,526,696 bushels	41,676,162	4,167,616
Tobacco (22)	868,163,275 pounds	6,424,408	18,491,859
Wheat (26)	658,534,252 bushels	126,109,309	66,841,226
Total		$880,019,105	$472,719,019

The estimated cost of producing these crops by machine method is only 53.7 per cent of the estimated cost of producing the same crops by hand method. In other words, the saving in cost of

† The data have been modified to show a comparison on the basis of equal quantities produced. If the equal areas be taken instead, the line should read: Cotton: by hand, etc., $9.23; $9.42; 2.09.

‡ The data have been modified to show a comparison on the basis of equal quantities produced. If the equal areas be taken instead, the line should read: Tobacco: by hand, etc., $8.88; $33.39; 276.33.

[1] Twelfth Census, Agriculture, Vol. I, p. cxxi.

[2] The figures in parentheses are the unit numbers used by the Department of Labor and indicate what set of reports was used as the basis of the estimated cost of production as here presented. The dates of the investigations for hand and for machine methods may be found by reference to the preceding table.

production amounts to 46.3 per cent. The average date of the hand-method investigations made use of in this presentation is 1850; the average date for the machine-method investigations is 1895 — a difference of forty-five years. Surely it will not be too much to say that during the last half of the nineteenth century the cost of production of these crops was reduced by one half. If we take into account the decreased cost to the farmer of food and lodging for his hired workmen and of the decreased cost of storage room for grain in the straw, then the total saving must appear to be even greater than this.[1]

Fluctuations in Quantity of Product

The use of machinery in the production of agricultural products, as in the production of manufactures, tends to diminish the fluctuations in supply. Capital in any form cannot, ordinarily, be diverted from the production for which it was designed, without more or less waste. If, for example, a farmer wishes to change from producing wheat to producing potatoes, he must sell his reaper at a sacrifice. The difficulty in making such changes operates against great and sudden changes from one line of production to another, even when the prospects for profit in such other line may be unusually bright. Thus the supply of the more profitable product

[1] To ascertain the amount of saving precisely is difficult; but looking through the successive stages of management and seeing that the owner of a stock farm in the preparation of his land by using lighter plows is able to cast off one horse in three; and by adopting other simple tools to dispense altogether with the great part of his plowing; that in the culture of crops by the various drills, horse-power can be partly reduced; the seed otherwise wanted, partly saved; and the use of manures greatly economized; while the horse hoe replaces the hoe at one half the expense; that at harvest the American reaper can effect nearly thirty men's work; while the Scotch cart replaces the old English wagon with exactly half the horses; that in preparing corn for food the steam threshing machine saves two thirds of our former expense; and in preparing food for stock the turnip cutter, at an outlay of 1 s., adds 8 s. a head in one winter to the value of sheep; lastly, that in the indispensable but costly operation of drainage, the materials have been reduced from 80 s. to 15 s., to one fifth namely of their former cost; it seems to be proved that the efforts of agricultural mechanists have been so far successful, as in all these main branches of farming labor taken together, to effect a saving on outgoings or else an increase of incomings of not less than one half. — Quoted from Pusey's report on Agricultural Implements in the Exhibit of 1851, by Hearn, "Plutology," p. 171

is restricted. On the other hand, farmers having their capital in the form of machinery devoted to the production of some particular crop will continue to produce somewhat of that crop rather than to have their capital lie idle or to suffer a greater loss from an attempt to change. This influence operates towards maintaining the former supply.

As a consequence of these two dissimilar forces, the supply of any product is more constant, and the resulting fluctuations in price less violent than they otherwise would be.

The Quality of Agricultural Products

The use of machinery is not without some influence on the quality of the product. Corn which, by reason of too early or too late planting, as was necessarily frequent under hand methods of production, does not mature properly is unwholesome; and grain cut, as formerly, under hand methods, before it is thoroughly ripened, becomes shrunken and of less value.

In the matter of preparing grain for use the advantages of machinery are equally evident. The present generation of Americans would be slow to eat bread made of flour from wheat threshed by the treading of horses or cattle.

PART III

Machinery and Labor

Saving of Labor

The quantity of labor which, by the use of machine power, is saved for other uses may be determined, in the case of any particular crop, by finding the difference between the number of days' work requisite for producing it by hand and by machine methods. In the table on the next page there is shown the quantity of man-labor requisite for producing the nine principal farm crops by hand and by machine methods; the quantity of labor saved in each case by the use of machinery; and the per cent which the quantity of saved labor is of the quantity requisite for producing the several crops by hand method.

DAYS' WORK NECESSARY TO PRODUCE

A. By Hand Methods

	Crop of	Methods of	Days' Work
Barley	1896	1829–1830	14,771,515
Corn	1894	1855	117,487,098
Cotton	1895	1841	80,108,771
Hay	1895	1850	99,257,257
Oats	1893	1830	105,810,334
Potatoes	1895	1866	14,715,501
Rice	1896	1870	396,687
Rye	1895	1847–1848	6,854,942
Wheat	1896	1829–1830	130,621,927
Total			570,024,032

B. By Machine Methods

	Crop of	Methods of	Days' Work	Days' Work Saved by Machinery	Per Cent
Barley	1896	1895–1896	630,354	14,141,161	95.7
Corn	1894	1894	45,873,027	71,614,071	60.9
Cotton	1895	1895	28,178,904	51,929,867	64.8
Hay	1895	1895	18,556,791	80,700,466	81.3
Oats	1893	1893	11,334,266	94,476,068	89.2
Potatoes	1895	1895	5,134,100	9,581,401	65.1
Rice	1896	1896	108,889	287,796	72.5
Rye	1895	1894–1895	2,739,147	4,115,795	60.0
Wheat	1896	1895–1896	7,099,560	123,522,367	94.5
Total			119,655,038	450,368,992	79.0

The total amount of man-labor power saved by the use of machinery in the production of these nine crops was 450,368,992 days' work or 79 per cent of the amount of work which would have been required to produce those same crops by the earlier hand methods. In other words, the quantity of labor now requisite for the production of a given quantity of these nine crops is, on the average, only 21 per cent, or a little over one fifth of the quantity which would be requisite under the former hand methods of production.[1]

[1] See also Edward Atkinson, Distribution of Products, pp. 14–15, 287.

Displacement of Labor

The question of the displacement of labor is one of peculiar interest to those who work for hire, because upon it seems to depend the further question of whether the use of machinery decreases the opportunities for earning a livelihood. That the introduction of machinery does frequently deprive workmen of employment in particular lines of work is undeniably true. The introduction of a harvesting machine throws cradlers and binders out of employment just as certainly as the introduction of water drives air out of a jug. It is idle to say that machinery does not displace individual workmen and equally idle to contend that such displacement does not entail hardship and suffering, for the more thoroughly and completely one devotes himself to any particular line of work, the less fitted does he become for taking up, and gaining a livelihood in, some other occupation. The extent of change which the introduction of machinery produces in the occupation of individuals is much obscured by the fact that the machine workman is usually given the same name as was borne by his predecessor; as, for example, men who operate a steam threshing machine are called threshers, though they may never have seen a flail and are almost as little fitted for operating a flail and winnowing apparatus as the old-time threshers would be to operate the new machine. The *old* occupation is gone. What we now have is a *new* occupation passing under the old name. And a new class of workmen (machinists) are in charge.

It is only when we speak of labor as a quantity or of laborers in mass that we can presume to say there has been no displacement of labor by machinery; and yet there may be, in this sense also, a displacement of labor. The displacement may be absolute, as where the labor force in any line of work is decreased, or it may be only relative, as where the rate of increase in the number of laborers employed falls below the rate of increase of laborers employed in industries generally.

The Absolute Displacement

For the agricultural industry considered as a whole, New England furnishes an instance of the absolute displacement of labor. In 1880 the population, ten years of age and over, engaged in agriculture, numbered 304,679; but in 1900 the number was only 287,829. This decrease was not due to a decadence of agriculture in those states, for the value of the New England agricultural products was more than fifty per cent greater in 1900 than in 1880.[1] It must have been due to the introduction of machinery as indicated by the reported valuation of agricultural implements and machines, which increased from $1.68 per acre of improved land in 1880 to $4.49 per acre in 1900.[2]

With respect to the work of cultivating and caring for those nine crops in the production of which machinery appears to be most extensively used, we may determine what absolute displacement, if any, has taken place by finding in each case what amount of labor was necessarily employed in the time of production by hand methods and comparing that amount with the amount of labor necessarily employed in the time of production by machine methods. Data of crop production for the exact years covered by the report of the Department of Labor concerning production by hand method cannot be secured for all of the crops, but taking the best available data and tabulating results we have the following:

DAYS' WORK OF MAN-LABOR REQUIRED FOR PRODUCING THE

	Crop of[3]	By Methods of	Days' Work
Barley	1839	1829–1830	882,007
Corn	1855	1855	74,151,217
Cotton	1841	1841	13,717,188
Hay	1849	1850	29,176,470
Oats	1839	1830	20,381,312
Potatoes	1866	1866	5,307,260
Rice	1871	1870–1871	124,383
Rye	1849	1847–1848	3,574,396
Wheat	1839	1829–1830	25,905,766
Total			173,219,999

DAYS' WORK OF MAN-LABOR REQUIRED FOR PRODUCING THE

	Crop of	By Methods of	Days' Work	Difference in Days' Work	Displacement
					Per cent
Barley . . .	1896	1895–1896	630,354	251,653	28.5
Corn . . .	1894	1894	45,873,027	28,278,190	38.1
Cotton . . .	1895	1895	28,178,904		
Hay	1895	1895	18,556,791	10,619,679	36.4
Oats	1893	1893	11,334,266	9,047,046	44.4
Potatoes . .	1895	1895	5,134,100	76,536	3.3
Rice	1896	1895–1896	108,889	15,494	12.5
Rye	1895	1894–1895	2,739,147	835,249	23.4
Wheat . . .	1896	1895–1896	7,099,560	18,806,206	72.6
Total . .			119,655,038	67,930,053	42.5

The table shows that in the work of producing each of the crops considered, excepting only the cotton crop, there has been an absolute displacement of man-labor. Disregarding the cotton crop, the absolute displacement in the work of producing the other eight

[1] The value of New England agricultural products, as reported in 1880, was $103,343,566; in 1900 it was $169,523,435 (Twelfth Census, Agriculture, Vol. I, p. 703).

[2] Twelfth Census, Agriculture, Vol. I, p. 698.

[3] The barley crop of 1839 was 4,161,504 bushels (Sixth Census, p. 408).

The corn crop of 1855 is assumed to be 765,431,923 bushels. This is midway between the amounts reported to the Census Office in 1850 and 1860.

The cotton crop of 1841 was 1,634,945 bales (World Almanac for 1896, p. 164).

The hay crop of 1849 was 13,838,642 tons (Eleventh Census, Agriculture, p. 90).

The oats crop of 1839 was 123,054,992 (Report of U. S. Dept. Agr., 1862, p. 572).

The potato crop of 1866 was 107,200,976 bushels (U. S. Dept. Agr., Year Book, 1898, p. 679).

The rice crop of 1870–1871 was 52,892,400 pounds (Letter of August 26, 1902, from the Department of Agriculture, Division of Statistics).

The rye crop of 1849 was 14,188,813 bushels (Patent Office Report, 1853, Pt. 2, p. 155).

The wheat crop of 1839 was 84,821,065 bushels (Report of U. S. Dept. Agr., 1862, p. 572).

Crop reports for the desired years could not be found in every case. When the difference between the year reported upon by the investigations of the Department of Labor and the nearest year for which a crop report could be had was greater than one year, a later crop report was preferred as yielding a displacement of labor too low rather than too high.

crops is 42.5 per cent. If cotton be included in the summary and allowance be made for the additional labor employed in the production of that crop, the absolute displacement becomes 30.9 per cent.

The Relative Displacement

The relative increase or decrease of the population engaged in agriculture as compared with the increase or decrease of the population engaged in each of the other occupation classes, for the continental portion of the United States, and for the several geographical divisions, during the period from 1880 to 1900, is shown in the tables on page 57.

In the United States as a whole, and in each division, excepting only the Western division, the rate of increase in the agricultural population has been much lower than in any other one of the occupation classes. Not only this, but, subject to the same exception, it has been lower than either the rate of increase in the total population or in the number of those engaged in gainful occupations. We must conclude, therefore, that for the period from 1880 to 1900, as compared with the growth in the number of those engaged in other industries, there has been a decrease in the number of those engaged in agriculture.[1]

The rate of increase of males and females in the various occupation classes has been very different. The relative rates of

[1] Bringing together the data concerning the population engaged in agriculture, as presented in the foregoing tables, so as to show the relative rate of increase in that class in the different sections of the country, we have the following:

POPULATION ENGAGED IN AGRICULTURE (MALES AND FEMALES)

	Base	1880	1890	1900
United States	7,713,875	100	111.04	135.88
North Atlantic division	1,048,442	100	104.86	102.47
South Atlantic division	1,622,081	100	102.89	125.30
North Central division	2,735,525	100	113.94	128.26
South Central division	2,120,525	100	109.48	155.66
Western division	187,302	100	191.51	248.34

STATISTICS OF OCCUPATIONS

UNITED STATES

MALES AND FEMALES TEN YEARS OF AGE AND OVER	BASE	1880	1890	1900
Total population	36,761,607	100	129.0	157.6
In gainful occupations	17,392,099	100	130.7	167.2
In agriculture	7,713,875	100	111.0	135.9
In professional services	603,202	100	156.6	208.7
In domestic and personal services	3,423,815	100	123.3	163.0
In trade and transportation	1,866,481	100	178.2	253.4
In manufacturing and mechanic arts	3,784,726	100	150.0	187.2
NORTH ATLANTIC DIVISION				
Total population	11,270,090	100	123.2	148.1
In gainful occupations	5,309,722	100	131.3	161.6
In agriculture	1,048,442	100	104.9	102.5
In professional services	207,551	100	144.3	198.2
In domestic and personal services	1,211,958	100	121.1	153.2
In trade and transportation	828,802	100	158.9	225.4
In manufacturing and mechanic arts	2,012,969	100	138.1	167.4
SOUTH ATLANTIC DIVISION				
Total population	5,286,645	100	121.4	144.1
In gainful occupations	2,677,762	100	116.4	149.4
In agriculture	1,622,081	100	102.9	125.3
In professional services	62,309	100	148.2	191.6
In domestic and personal services	517,429	100	112.3	154.4
In trade and transportation	177,436	100	174.0	238.0
In manufacturing and mechanic arts	298,507	100	156.4	210.3
NORTH CENTRAL DIVISION				
Total population	12,760,841	100	132.5	158.9
In gainful occupations	5,625,123	100	136.4	170.3
In agriculture	2,735,525	100	113.9	128.3
In professional services	230,622	100	161.0	207.4
In domestic and personal services	1,025,089	100	129.6	171.7
In trade and transportation	595,791	100	193.2	280.5
In manufacturing and mechanic arts	1,038,096	100	164.3	208.4
SOUTH CENTRAL DIVISION				
Total population	6,076,243	100	128.4	166.6
In gainful occupations	3,022,173	100	120.3	172.4
In agriculture	2,120,525	100	109.5	155.7
In professional services	73,455	100	155.6	207.4
In domestic and personal services	464,909	100	112.7	170.7
In trade and transportation	161,449	100	195.3	294.8
In manufacturing and mechanic arts	201,835	100	178.5	241.3
WESTERN DIVISION				
Total population	1,367,788	100	175.5	236.5
In gainful occupations	757,319	100	176.5	224.9
In agriculture	187,302	100	191.5	248.3
In professional services	29,265	100	228.6	333.1
In domestic and personal services	204,430	100	156.1	181.6
In trade and transportation	103,003	100	227.3	320.3
In manufacturing and mechanic arts	233,319	100	153.3	188.4

increase, in the agricultural industry, as reported for the several sections of the country, are shown in the following table:

POPULATION ENGAGED IN AGRICULTURE

		Base	1880	1890	1900
United States	Males	7,119,365	100	110.78	132.09
	Females	594,510	100	114.19	164.39
North Atlantic division	Males	1,043,497	100	103.38	99.64
	Females	4,945	100	418.07	701.37
South Atlantic division	Males	1,358,072	100	104.68	125.00
	Females	264,009	100	93.67	126.86
North Central division	Males	2,720,123	100	111.64	125.31
	Females	15,402	100	520.47	649.38
South Central division	Males	1,811,486	100	110.28	155.03
	Females	309,039	100	104.80	159.30
Western division	Males	186,187	100	188.98	241.57
	Females	1,115	100	613.36	1379.55

The foregoing table shows that women, much more rapidly than men, are turning to agricultural pursuits. The introduction and use of machine power, by decreasing the requirements of physical strength, has placed men and women upon a more equal footing, and women promise now to invade the agricultural industry as they have heretofore invaded that of manufactures.

We may ascertain the extent of the movement to or from any occupation class during any period by comparing the distribution of the people among the various occupation classes at the beginning of such period with their distribution at its close.

The first table on page 59 shows, for the United States and for the several geographical divisions, what per cent of the total number of those engaged in gainful occupations in 1870 and in 1900 were in the several occupation classes.

Finding the difference between these several pairs of per cents, and representing increases by positive numbers and decreases by negative numbers, we get the per cent of those engaged in gainful occupations who have shifted to or from the several occupation classes, during the period from 1870 to 1900:[1]

[1] See the second table on page 59.

		Agriculture	Professional Service	Domestic and Personal Service	Trade and Transportation	Manufacturing and Mechanic Arts
United States	1900	35.7	4.3	19.2	16.4	24.4
	1870	47.6	3.0	18.2	9.8	21.4
North Atlantic division .	1900	12.5	4.8	21.6	21.8	39.3
	1870	24.9	3.4	21.4	14.2	36.1
South Atlantic division .	1900	50.8	3.0	20.0	10.5	15.7
	1870	63.8	2.0	17.5	5.9	10.8
North Central division .	1900	36.6	5.0	18.4	17.4	22.6
	1870	52.5	3.4	16.7	9.3	18.1
South Central division .	1900	63.4	2.9	15.2	9.1	9.4
	1870	71.5	2.2	14.0	5.3	7.0
Western division . . .	1900	27.3	5.7	21.8	19.4	25.8
	1870	27.2	3.1	25.4	12.4	31.9

	Agriculture	Professional Service	Domestic and Personal Service	Trade and Transportation	Manufacturing and Mechanic Arts
United States	— 11.9[1]	1.3	1.0	6.6	3.0
North Atlantic division .	— 12.4	1.4	0.2	7.6	3.2
South Atlantic division .	— 13.0	1.0	2.5	4.6	4.9
North Central division . .	— 15.9	1.6	1.7	8.1	4.5
South Central division . .	— 8.1	0.7	1.2	3.8	2.4
Western division	— 0.1	2.6	— 3.6	7.0	— 6.1

Now the total number engaged in gainful occupations in 1900 was 29,074,117, and 11.9 per cent of 29,074,117 gives 3,459,819 as the number which, under the conditions existing in 1870, should have been found in the agricultural class in 1900 in

[1] This — 11.9 per cent does not mean that there was a decrease, *absolutely*, in the number of those engaged in agriculture, but only *relatively*, and in this sense: that, whereas the number of those engaged in agriculture increased during the period from 1870 to 1900, the increase was so much less than in the other occupation classes that this particular class failed, by a number equal to 11.9 per cent of the total number engaged in gainful occupations in 1900, to maintain its former proportion. A similar remark applies to each one of the other cases where a negative number appears. The decrease in the class of those engaged in manufactures and mechanic arts in the Western division is due to the fact that, under the classification used, miners and quarrymen are included in that occupation class. In 1870 these workers constituted a high proportion of the total number engaged in gainful occupations in that division.

addition to the number actually found in that occupation class. The number reported as engaged in the agricultural industry, in 1900, was 10,381,765. It appears, therefore, that during the period from 1870 to 1900 the agricultural class lost, relatively, almost one fourth of its membership. Of this number 1,523,365,[1] nearly one half of the total for the whole United States, were from the North Central States.

A table constructed similarly to the one given above and showing, separately, the shifting of males and of females among the different occupation classes, during the period from 1870 to 1900, is presented herewith as follows:

SHIFTING OF THE POPULATION ENGAGED IN THE DIFFERENT OCCUPATION CLASSES: 1870–1900

		Agriculture	Professional Service	Domestic and Personal Services	Trade and Transportation	Manufacturing and Mechanic Arts
United States	Males	— 12.5	0.9	2.5	6.6	2.5
	Females	— 3.2	3.1	— 13.6	8.3	5.4
North Atlantic division	Males	— 14.4	1.2	2.3	7.5	3.4
	Females	1.5	1.2	— 15.5	10.9	1.9
South Atlantic division	Males	— 13.8	0.6	3.6	5.3	4.3
	Females	— 7.8	2.6	— 4.8	2.9	7.1
North Central division	Males	— 15.7	1.0	2.9	8.0	3.8
	Females	5.4	2.6	— 30.1	12.3	9.8
South Central division	Males	— 9.0	0.2	2.5	4.2	2.1
	Females	— 3.4	2.9	— 5.7	2.4	3.8
Western division	Males	1.4	1.7	— 4.1	7.2	— 6.2
	Females	5.0	6.7	— 26.0	12.1	2.2

It has been shown above that, relatively speaking, nearly three and a half million people changed from agriculture to other industries during the thirty-year period 1870–1900. So great a displacement will, doubtless, at first seem incredible. There is need

[1] The number engaged in gainful occupations in the North Central States in 1900 was 9,580,913 (Twelfth Census, Population, Vol. II, p. cxxviii). The portion of this population which, during the period from 1870 to 1900, has shifted from agriculture to other occupation classes was 15.9 per cent (see p. 59).

to look at the problem from another point of view: The total number of persons (i.e. farmers, planters, overseers, and agricultural laborers) reported in 1870 as engaged in farming operations was 5,948,561. They produced in that census year 1,388,526,403 bushels of cereals. Making allowance for the short corn crop of 1869, we may say that they were able to have produced 1,519,704,342 bushels of cereals — an average of 255.4 bushels per worker. At this same rate, the 10,381,765 persons (i.e. farmers, planters, overseers, and agricultural workers) engaged in cereal production in the census year of 1900 could have produced 2,651,502,781 bushels of cereals. The amount would, however, have been less than the actual product in 1899 by 1,783,195,965 bushels. To have made good this deficiency, on the basis of the efficiency of the average worker in 1869, would have required an additional force of 6,981,973 workers. This is more than double the number of those who went from agriculture into other occupations. We must, therefore, in all fairness, say, since the machine power introduced into the business of farm work during the period from 1869 to 1899 has more than taken the place of those workers who, during that period, removed from agriculture to other occupations, it has been the cause of their removal. That more have not so removed is, of course, due to the fact that the farm work of the present day calls for a great amount of work not demanded by the business of farming as followed in earlier years.

* * * * * * * * *

But, one may ask, What becomes of the workers who are thus thrown out of employment? and, Are there not some compensating advantages? The first of these questions is easily answered, for in the extreme case of an individual who suffers absolute displacement the only alternative from idleness is to accept a lower rate of wages for work in his accustomed employment or to enter as an inexperienced workman in some other employment at, most likely, a still lower rate of wages. His compensating advantage is an uncertain one and one hard to estimate. Besides, it does not ordinarily accrue until the time of his greatest need is passed.[1] It

[1] It is small consolation to a workingman to be assured that in a year's time he will have plenty of work, if in the meantime he must remain breadless. Loss

arises from the decreased market price of the commodity which he formerly helped to produce. If it is a commodity which enters into his own consumption, then the lower price which he pays for it will, in a measure, offset the lower wage which he receives in his new occupation. If it is not a commodity which enters into his own consumption, then his compensating advantage must come through the stimulus which the decreased price of this particular commodity gives to other industries in which it is employed as raw material or, more properly, as a factor of production — cheaper raw material yielding, of course, a decreased cost of production, higher profits, and a stronger demand for labor.[1]

As to those workmen who suffer only relative displacement there is, ordinarily, no need for any compensating advantages. The greatest hardship which the use of machinery lays upon them is that of avoiding those occupations in which the demand for workmen is becoming weak. It will be noticed, too, that for every relative decrease in the number of persons engaged in one industry, there is a corresponding increase in some other industry. As a matter of fact, the persons engaged in gainful occupations constitute a greater proportion of the total population now than formerly.

* * * * * * * * *

of work even for a few weeks may exhaust his credit and the affection and means of his friends, and there may remain nothing for him but starvation, unless poor-laws or private charity come to the rescue.— NICHOLSON, "Effects of Machinery on Wages," p. 30.

[1] Labor-saving methods seem to be a calamity, because the effect is to interfere with present pursuits and deprive some of their accustomed means of livelihood; to render useless, skill acquired after a lifelong training. The benefits all seem to accrue to the person who first uses an invention, while the ones displaced are apparently shut out of the industrial system. It is not noticed how they are gradually absorbed into other channels of employment that open up as the cost of production is decreased. If such were not the case, the whole industrial mechanism would soon come to a standstill, considering the progress of inventions supplemented by the army of aliens that arrive yearly and the increasing proportion of women breadwinners. — HENRY WHITE, "The Problem of Machinery," *The American Federationist*, Vol. X, p. 83

The Effect of the Use of Machinery upon the Size of Farms and the Resulting Relationship between the Dependent and the Independent Farming Classes

The average size of farms of the continental United States and in the several divisions, as shown by the successive census returns from 1850 to the present, given in acres, is as follows: [1]

	1900	1890	1880	1870	1860	1850
United States	147.0	136.5	133.7	153.3	199.2	202.6
North Atlantic division	97.5	95.3	97.7	104.3	108.1	112.6
South Atlantic division	109.1	133.6	157.4	241.1	352.8	376.4
North Central division	145.2	133.4	121.9	123.7	139.7	143.3
South Central division	156.0	144.0	150.6	194.4	321.3	291.0
Western division	393.5	324.1	312.9	336.4	366.9	694.9

An inspection of the foregoing table shows that for the period from 1850 to 1880, for the whole United States and for each division, except the South Central, in 1860, there was a constant tendency toward smaller farms. In the North Atlantic and South Central divisions this tendency is shown to have been still in operation in 1890, and the average size of farms in the North Atlantic division in 1900, although greater than in 1890, was still a trifle below the average shown for 1880. In the South Atlantic division the tendency toward smaller farms has continued unbroken to the present time; but otherwise, for the several divisions and for the United States as a whole, the year 1880 marks the point of the smallest average-sized farms. The returns subsequent to that date, except in the cases noted, show a marked increase in the average size of farms.

The total area in farms may, however, be somewhat misleading when considered as an index of the extent of farming operations subject to the influence of machinery, as will clearly appear upon a comparison of the data in the table last above given with those of the following table showing the average number of acres of improved land, per farm, 1850–1900, inclusive.[2]

[1] Twelfth Census, Agriculture, Vol. I, p. 688.
[2] *Ibid.*, p. xxii.

	1900	1890	1880	1870	1860	1850
United States	72.7	78.3	71.0	71.0	79.8	78.0
North Atlantic division	57.4	64.3	66.6	68.3	69.0	69.3
South Atlantic division	47.9	55.6	56.1	80.7	115.6	120.9
North Central division	101.2	95.8	80.6	69.7	67.7	61.0
South Central division	48.3	61.0	56.2	60.8	89.7	82.6
Western division	111.8	157.8	185.9	168.1	106.4	51.8

By this table it appears that the lowest average number of acres of improved land per farm, for the United States as a whole, was reached in 1870; that this average was the same in 1880; and that while it rose somewhat in 1890, it fell again in 1900 almost to the level for 1870 and 1880. Turning to the several divisions we find that, with but one exception, the movement toward smaller farms continues and is apparent in the returns for 1900. The one exception is, however, all important in this discussion, for it is the North Central division, the one above all others devoted to the use of farm machinery, and in this division it is shown, not only for the period from 1880 but for the whole period from 1850 to 1900, that there has been a strong and unvarying increase in the average number of acres of improved land per farm, rising from an average of 61.0 acres in 1850 to 101.2 acres in 1900.

The average number of acres in crops is a still better index to the extent of farming operations. Unfortunately, this average cannot be given for the whole of the period from 1850 to 1900; but for the more important part of that period, namely from 1880 to 1900, it can be given with tolerable completeness.

The first table on page 65 shows the average number of acres in all farm crops, per farm of ten acres and over, in 1880, 1890, and 1900, and agrees, in general, with the corresponding portion of the table showing the average number of acres of improved land per farm; but it is to be noted that, according to the table now presented, the average crop area per farm is less for the years 1890 and 1900 than for the year 1880 in only two divisions; namely, the South Atlantic and South Central. In each of the other divisions, and for the United States as a whole, the average crop acreage per farm, both for 1890 and 1900, is

greater than in 1880. The movement toward a larger average crop acreage is especially strong in the North Central division.

AVERAGE NUMBER OF ACRES IN ALL FARM CROPS, PER FARM OF TEN ACRES AND OVER, IN 1880, 1890, AND 1900[1]

	1900	1890	1880
United States	49.8	48.6	42.6
North Atlantic division	35.1	35.7	33.7
South Atlantic division	29.4	33.4	36.2
North Central division	73.0	65.1	51.5
South Central division	33.6	34.3	34.6
Western division	68.5	68.4	64.5

The relative strength of the tendency toward a greater average crop acreage per farm will be more readily appreciated if the facts disclosed in the foregoing table are presented from the basis of a common denominator, as follows:

INDEX NUMBERS REPRESENTING THE AVERAGE NUMBER OF ACRES IN ALL FARM CROPS, PER FARM OF TEN ACRES AND OVER, IN 1880, 1890, AND 1900

	Base	1880	1890	1900
United States	42.6	100	114.1	116.9
North Atlantic division	33.7	100	105.9	104.2
South Atlantic division	36.2	100	92.3	80.9
North Central division	51.5	100	126.4	141.8
South Central division	34.6	100	99.1	97.1
Western division	64.5	100	106.0	106.2

There are three principal causes which have operated to produce the different conditions disclosed by this last table.

First: As between the North and South, there is a difference in the character of the workers. The negro workmen, as compared with the white workmen in the North and West, are lacking in

[1] Number of farms derived from Twelfth Census, Agriculture, Vol. I, pp. 688, 690.

the intelligence requisite for conducting extensive farming operations, as also for the using of machine power advantageously. This, coupled with the breaking up of the old plantation system, has tended to give smaller farms in the South Atlantic and South Central divisions.[1]

Second: The character of the principal crops cultivated in the Southern states are those in the cultivation of which, as compared with the crops raised in the Northern states, machine power is but little used. The only machine which plays any considerable part in the production of the distinctively Southern crops is the cotton gin, and the influence of this machine was in full operation long before the year 1880; whereas the influence of the machines used in the production of the distinctively Northern crops was, at that time, only fairly well under way.

Third: As between the North Atlantic, North Central, and Western divisions, the character of the cultivation affects the size of farms. The North Atlantic States are much devoted to market gardening, and the general character of farm work in that division is, therefore, more intensive, and a given area gives employment for a greater quantity of both machine and man-labor power. The Western States, in like manner, much more than the North Central States, are devoted to market garden and orchard products.[2] The North Central States lead in what may be termed field crops.[3]

Looking to the total farm acreage, it may seem questionable whether the effect of machinery is to increase or decrease the size of farms. But it is noticeable that the total farm acreage includes land kept for stock-raising, for timber supply, for speculation, etc. and includes altogether too much of that with which machinery has nothing to do, to make it a fit basis for a study of the influence of farm machinery either upon the size of farms or upon the nature and extent of farm work. When we use the word "farm" to denote only that portion of the land with which machinery has to do (i.e. the area devoted to the production of crops), it becomes apparent that, other things being equal, the use of farm

[1] Hammond, Cotton Industry, pp. 123–129.
[2] See Twelfth Census, Agriculture, Vol. II, pp. 324, 599 *et seq.*
[3] See pages 67–68.

machinery leads to, or is at any rate accompanied by, an increase in the size of farms. This increase is most marked in the states of the North Central division.

Some Consequences Resulting from the Use of Farm Machinery in the Region most devoted to its Use

It has been shown that the cereal and hay crops are those in the production of which machine power plays the greatest part. It now becomes needful to know the relative importance of the cereal and hay crops in the different divisions of the country. The following table shows for the United States and for the several geographical divisions the total number of acres in all crops; the total number of acres in cereals and hay; and the per cent which the total acreage in the cereals and hay bears to the total crop acreage, as reported by the census of 1900.

	Total Crop Acreage [1]	Total Acreage in Cereals and Hay	Per Cent
United States	289,734,591	246,674,289	85.1
North Atlantic division	24,683,365	21,876,493	88.6
South Atlantic division	29,194,661	19,125,863	65.5
North Central division	163,000,561	155,000,940	95.1
South Central division	56,233,143	35,405,091	62.9
Western division	16,622,861	15,265,902	91.8

For the purpose of further narrowing the field of investigation, it may be assumed also, as a matter of common knowledge, that, although machinery is much used in the production of hay, the work of hay production constitutes relatively but a small portion of the total work requisite for the production of both cereals and hay. It is, therefore, the cereal-producing regions to which we must look for the most marked effects of the use of farm machinery.

The table on next page, taken from the report of the Twelfth Census,[2] indicates the distribution of the cereal crops and the

[1] Twelfth Census, Agriculture, Vol. II, p. 62.
[2] *Ibid.*

relative importance of the cereal crops, from the standpoint both of acreage devoted to their production and of the value of the product as compared with the acreage and value of all crops.

	Per Cent of Acreage of All Crops in Cereals	Per Cent of Value of All Crops in Cereals	Average Value per Acre	
			All crops	Cereals
United States	63.8	51.0	$10.04	$8.02
North Atlantic division .	36.3	26.6	15.19	11.14
South Atlantic division .	58.1	33.6	11.32	6.55
North Central division . .	73.2	71.1	8.42	8.18
South Central division . .	56.1	36.3	10.99	7.12
Western division	49.4	37.0	11.59	8.69

The North Central division ranked first in the production of cereals, not only in 1899 but also in 1889 and in 1879.[1] It ranked first also in the production of hay.[2] That it is the region of increasing average size of farms and of increasing crop acreage per person engaged in farm work has already been shown. The North Central States will therefore furnish the best field for a study of the effects of farm machinery.

Among the states of the North Central division there were seven which, for the year 1899, reported that over 70 per cent of their total crop acreage was in cereals, and also that the value of their cereal crops for that year constituted more than 70 per cent of the value of their total crop production.[3] The seven states and the per cent of their reported cereal acreage and cereal crop values to their total crop acreage and crop values, respectively, are shown in the table at the top of page 69.[4]

The hay and forage acreage of these seven states, in 1899, was 35.6 per cent of the total hay and forage acreage of the United States[5] and their acreage in cereals and hay and forage was

[1] Twelfth Census, Agriculture, Vol. II, p. 63.

[2] *Ibid.*, p. 215.

[3] Oklahoma is the only other state or territory in the Union which reported so high a per cent of acreage and value in cereals for the year 1899. But no separate report was returned for Oklahoma in 1880, and it is, therefore, necessarily omitted from this study.

[4] Twelfth Census, Agriculture, Vol. II, p. 62.

[5] *Ibid.*, p. 215.

State	Cereal Acreage, of Total Crop Acreage	Cereal Value, of Total Crop Value
	Per cent	*Per cent*
Illinois	80.4	77.6
Iowa	76.3	76.9
Kansas	72.5	74.2
Nebraska	79.7	82.3
Minnesota	74.0	75.9
North Dakota	71.7	74.4
South Dakota	70.2	78.3

96.6 per cent of their own total crop acreage.[1] These seven states constitute, therefore, a region in which the cultivated area is almost wholly devoted to the production of those crops in the cultivation and handling of which farm machinery is most used. Their acreage in the different farm crops, as reported to the Census Office, for the period of 1880–1900, was as follows:

	1900	1890	1880
Cereals[2]	82,116,414	58,522,442	39,923,160
Hay and forage[3]	22,010,381	19,770,323	7,998,365
Tobacco[4]	2,587	4,500	6,906
Hops[5]	911	46	103
Cotton[6]	153	731	
Totals	104,130,446	78,298,042	47,928,534

The average acreage in farm crops, per farm of ten acres and over,[7] was, in 1880, 64.4 acres; in 1890, 86.2 acres; in 1900, 102.5 acres. The average acreage in all farm crops, per person cultivating such crops,[8] was, in 1880, 40.6 acres; in 1890, 53.9 acres; in 1900, 62.4 acres.

[1] The total crop acreage of these seven states in 1899 was 108,394,908 acres (Twelfth Census, Agriculture, Vol. II, p. 62).

[2] Twelfth Census, Agriculture, Vol. II, p. 63.

[3] *Ibid.*, p. 215.

[4] *Ibid.*, p. 527.

[5] *Ibid.*, p. 540; Eleventh Census, Agriculture, Vol. II, p. 91 *et seq.*

[6] Twelfth Census, Agriculture, Vol. II, p. 424.

[7] Tracts of less than ten acres are excluded as being vegetable, or truck, farms rather than farms for the raising of the crops here considered. For number of farms, see Twelfth Census, Agriculture, Vol. I, pp. 688, 690.

[8] Agricultural laborers, farmers, planters, and overseers.

Presenting these data in form to show the relative rates of increase, we have the following:

	Base	1880	1890	1900
Average acreage in all farm crops per farm . . .	64.4	100	133.9	159.2
Average acreage in all farm crops per person cultivating same	40.6	100	132.8	153.7

The tendency in machine-using states toward a greater crop acreage per farm and per person is strong and unmistakable.[1]

The persons who cultivated these crops are classified as follows:

	1900	1890	1880
Agricultural laborers[2]	612,418	359,894	352,565
Farmers, planters, and overseers	1,056,237	1,091,867	828,800
Totals	1,668,655	1,451,761	1,181,365

Presented from the basis of a common denominator, these data show rates of increase as follows:

	Base	1880	1890[3]	1900
Agricultural laborers	352,565	100	102.1	173.6
Farmers, planters, and overseers	828,800	100	131.7	127.4

[1] With the coming of the great harvesters, the planters, cultivators, and scores of other farm mechanisms there was an opportunity to double and quadruple the crops, and the farms gradually increased from ten and twenty acres to one and two hundred.— George E. Walsh, "Machinery in Agriculture," *Cassier's Magazine*, Vol. XIX, p. 139

[2] This includes 4264 garden and nursery laborers in the returns for 1900 and probably one half as many of the same in the returns for 1890 and for 1880; but they were not separately reported by the Tenth and Eleventh censuses, and hence cannot be discarded.

[3] The returns of the Eleventh Census are known to have been very defective in this, that "farmers' sons and daughters were often reported as farmers rather than as farm laborers, thus very much complicating the occupation returns in this class" (Letter of Carroll D. Wright, under date of Dec. 29, 1899). That some such error must have crept into the returns is evident on a consideration of the rate of increase of the two classes (i.e. "agricultural laborers" and "farmers,

Disregarding the returns of the Eleventh Census, let us consider what these per cents indicate. Starting in 1880 with a given ratio between the number of farm employees and employers, we find that in twenty years the employed, or dependent, class has increased 73.6 per cent, while the employing, or independent, class has increased only 27.4 per cent. In other words, during the twenty-year period from 1880 to 1900, the dependent increased 46.2 per cent more rapidly than did the independent class. With these figures in mind, one needs but a moment's reflection to satisfy himself that, at the rates of increase indicated, the dependent class of farm operators must soon outnumber the independent class.[1] There is no need here for argument that a large dependent class is dangerous to society.[2]

The reason for this condition of affairs has been already indicated. The profitable use of a machine requires that it shall have

planters, and overseers"), when taken together. The combined rate of increase appears as follows:

	Base	1880	1890	1900
Agricultural laborers, farmers, planters, and overseers	1,181,365	100	122.9	141.2

These figures show that the total population engaged in farming increased at a uniform rate, and there seems no good reason for supposing that there was in fact any such extraordinary movement from the class of employees to the class of employers and then back again within the period of twenty years from 1880 to 1900, as indicated by the returns.

[1] Of these evils that which is most serious and general is the divorce which machinery is bringing about between labor and capital. So far has this already gone that people have come to think of the two as things naturally distinct from each other, and to regard it as a normal state of affairs that the persons who perform the manual toil of a country shall be absolutely dependent for employment on a comparatively small class known specifically as capitalists, in whose hands are concentrated the implements with which alone modern industry can be successfully carried on. That such dependence is unfavorable to the highest type of manhood will hardly be questioned; and the enormous extent to which machinery has increased and is still increasing the percentage of persons subject to such dependence is surely a most serious matter. The manhood of a nation is its most precious possession, for the loss or deterioration of which no increase of material wealth can adequately compensate.— Edward T. Peters, "Some Economic and Social Effects of Machinery," p. 2

[2] In 1890 the proportion of male agricultural laborers reported as unemployed during some portion of the census year was 17.2 per cent; in 1900 it was 36.1 per cent. Females, in 1890, 18.6 per cent; in 1900, 44.3 per cent (Twelfth Census, Occupations, pp. ccxxviii–ccxxxi).

a field of operation suited to its capacity;[1] just as a man, in order that he may work to best advantage, requires more and heavier labor than that suited to a boy. Hence the movement toward larger farms and greater average crop acreage per farm so noticeable in the machine-using states. Moreover, the larger farms call for a corresponding increase in the amount of capital at the command of the farmer, especially when, as in this country, there is a tendency toward more intensive cultivation. This is equally true whether the farmer be an owner or a tenant. The increasing amount of capital requisite for farm proprietorship makes it more and more difficult for a member of the dependent class (i.e. an agricultural laborer) to become a proprietor.[2] His option to work for himself or to work for wages is more and more qualified, and hence the greater proportionate increase in the membership of the dependent class. That there has been a constant increase in the amount of capital requisite for farm proprietorship will be evident from an inspection of the following data, showing for this group of seven states, as reported to the Census Office:

1. The average value, per farm, of all farm property, including land with improvements, implements and machinery, and live stock, was, in 1880, $3515; in 1890, $4859; in 1900, $6531.[3]

2. The average value, per farm, of lands with improvements, including buildings, was, in 1880, $2835; in 1890, $3930; in 1900, $5358.[4]

[1] In order to make the steam-power machines of value, the farms must be large and extensive. On small farms they would prove too costly either in the operation or initial expense. For this reason it has been said that steam power could never supplant horse power on the farms, for our democratic notions demand that farming-lands shall never be consolidated in the hands of a few, and farming on a gigantic scale can never represent more than a very limited part of the industry in this country. Yet the tendency in the West is to operate enormous farms, combining several rather than cutting up into smaller ones. — GEORGE E. WALSH, "Steam Power for Agricultural Purposes," *Harper's Weekly*, Vol. XLV, p. 567

[2] No English agricultural laborer, in his most sanguine dreams, has the vista of occupying, still less of possessing, land. He cannot rise in his calling. He cannot cherish any ambition, and he is in consequence dull and brutish, reckless and supine. — ROGERS, "History of Agriculture and Prices," Vol. I, p. 693

[3] Twelfth Census, Agriculture, Vol. I, pp. 688, 694.

[4] *Ibid.*, pp. 688, 696.

3. The average value, per farm, of implements and machinery on farms was, in 1880, $136; in 1890, $151; in 1900, $208.[1]

The rate at which these several factors have increased will appear in the following:

	Base	1880	1890	1900
Average value of all farm property	$3,515	100	138.2	185.8
Average value of farms (land and improvements)	2,835	100	138.6	189.0
Average value of implements and machines	136	100	111.0	152.9
Farmers, planters, and overseers	828,800	100		127.4
Agricultural laborers	352,565	100		173.6

Wages under Hand and under Machine Methods

Daily Wages — Wages of Skilled and Unskilled Workmen

Touching the matter of daily wages for the same work under hand and under machine methods of production, the Thirteenth Annual Report of the Department of Labor is, probably, the best source of information. That report shows, in typical cases, the rates of wages paid for the different kinds of work required in the production of twenty-seven different farm crops by hand and by machine methods. The data in twenty-six cases are available for our present purpose.

It appears by that report that the lowest wage customarily paid, in the season of 1829–1830, to any workman engaged in the production of wheat, by hand method, was 50 cents; the highest, 75 cents. In 1895–1896, the lowest daily wage reported for workmen engaged in the production of wheat, by machine method, was $1.50; the highest, $4.50. The average rate of wages for this work, in 1829–1830, was 57 cents; in 1895–1896, it was $2.47.[2] Collecting similar data from each of the twenty-six sets of usable returns, we have the following:

[1] Twelfth Census, Agriculture, Vol. I, pp. 688, 698.

[2] The average here used is a weighted average, secured by dividing the total amount of wages paid by the total number of days' work performed at the different rates of wages.

DAILY WAGES

Unit Number[1]	Crop	Hand Labor	Machine Labor	Hand Method		Machine Method		Average Daily Wages	
				Lowest	Highest	Lowest	Highest	Hand	Machine
		Date	*Date*						
1	Apple trees	1870–1872	1893–1895	$.85	$2.00	$.85	$2.00	$1.56	$1.59
2	Apple trees	1869–1871	1893–1895	.85	2.00	.85	2.00	1.56	1.28
3	Barley	1829–1830	1895–1896	.50	.75	1.50	4.50	.56	2.21
4	Beets	1850	1895	.40	.75	1.00	1.00	.69	1.00
5	Broom corn	1860	1895	.50	1.00	1.25	1.50	.99	1.25
6	Carrot	1855	1895	.40	.75	.75	1.25	.62	1.01
7	Carrot	1850	1895	.40	.75	.75	1.25	.72	.90
8	Corn	1855	1894	.75	1.00	1.00	2.50	.78	1.53
9	Corn	1855	1894	.50	1.00	1.00	1.00	.94	1.00
10	Cotton	1841	1895	.50	.50	.50	1.00	.50	.99
11	Hay	1860	1894	.50	1.00	.75	1.25	.86	1.11
12	Hay	1850	1895	.50	1.00	.75	1.25	.83	1.05
13	Oats	1830	1893	.50	.75	1.25	2.50	.56	1.50
14	Onion	1850	1895	.40	.75	.75	1.25	.70	1.00
15	Peas	1856	1895	.62½[2]	.62½[2]	1.00[2]	2.00[2]	.62½[2]	1.04[2]
16	Potatoes	1866	1895	1.00	1.00	1.00	1.00	1.00	1.00
17	Rice	1870	1895	1.00	1.00	.65	.65	1.00	.65
18	Rye	1847–1848	1894–1895	.63[2]	.75[2]	1.00[2]	2.00[2]	.65[2]	1.05[2]
19	Strawberry	1871–1872	1894–1895					1.30	1.38
20	Sugar cane	1855	1895	1.00	1.00	.65	.65	1.00	.65
21	Sweet potato	1861	1895	.50	1.00	.40	.80	.76	.62
23	Tobacco	1844	1895	.75[2]	.75[2]	1.00[2]	1.00[2]	.75[2]	1.00[2]
24	Tomato	1870	1895	.50	1.00			.93	.91
25	Turnip	1855	1895	.40	.75	.75	1.25	.59	.88
26	Wheat	1829–1830	1895–1896	.50	.75	1.50	4.50	.58	2.00
27	Wheat	1829–1830	1895–1896	.50	.75	1.50	4.50	.57	2.47

It is evident from an inspection of the foregoing table that the variation between the highest and lowest rates of daily wages is much greater under machine methods than under hand methods and that the average rate of wages is much higher under machine methods than under hand methods. An average of averages gives 83 cents for the hand method, $1.19 for machine method.

Of course, machine power is much more used in the production of some of these crops than in the production of others. In

[1] See footnote 2, p. 45.

[2] With board.

several cases production is still almost wholly by hand method.[1] In such cases the data are not what they appear to be, — a showing of hand method as compared with machine method, — but rather only a showing of production by hand method at different dates.

It will be worth our while to inquire in what way the introduction of machine power has affected the rates of wages for the work of producing these different crops. Turning first to a consideration of wages paid in the production of five crops, now largely produced by machine power, we collect the following data:

Unit Number	Crop	Average Daily Wages	
		Hand	Machine
3	Barley	$0.56	$2.21
8	Corn	.78	1.53
11	Hay	.86	1.11
13	Oats	.56	1.50
27	Wheat	.57	2.47

An average of averages gives 66 cents for the hand methods and $1.76 for the machine method — an increase of 166 per cent.

A similar showing for the five crops, in which there appears to have been little or no change in the methods of production, is as follows:

Unit Number[2]	Crop	Average Daily Wages	
		Hand	Machine
2	Apple trees	$1.56	$1.28
16	Potatoes	1.00	1.00
19	Strawberries	1.30	1.38
21	Sweet potatoes	.76	.62
24	Tomatoes	.93	.91

An average of averages gives $1.11 as the average daily wage in the time of hand methods and $1.04 as the average daily wage in the time of machine methods — a decrease of 6.3 per cent.

[1] Thirteenth Annual Report, Dept. Labor, p. 11.

[2] See footnote 2, p. 45.

The position of the unskilled workman,[1] meaning now the workman who is untrained in the use of machinery, is a peculiar one. In a lecture on ballad poetry, delivered at the University of Wisconsin in the spring of 1903, Professor Moulton, of The University of Chicago, called attention to the fact that before the time of written literature the best literary productions were equally accessible to the free and to the unfree. The slave, as well as his master, might know and enjoy the choicest of literary productions. But, with the invention of writing and, especially, of printing, the best literature came to be put into book form. Books were expensive, and the knowledge requisite for using them could be acquired only by a long and difficult course of training. From the very nature of the case, the best literature thus became inaccessible both to the slaves and to the poorer classes of freemen. They could gain no positive advantage from the new invention; and they lost, relatively, by reason of the intellectual gulf which opened between them and those others whose more fortunate stations gave both access to the written or printed volumes and afforded opportunity for learning how to use them.

This same process is now working itself out in the matter of labor and machinery. To the skilled workman, machinery opens the way to profit and advancement. But to the unskilled workman, it is as a sealed, or unintelligible, book. He does not understand it; and the hopelessness of competing with one who does understand it only intensifies his consciousness of inferiority and increases the burden of his struggle for existence.[2] Having,

[1] There is, I think, a great deal of confusion and consequent misunderstanding arising from a loose use of the term "unskilled workman." We speak of paying higher wages to a skilled workman than to an unskilled workman; but the essential element is not skill but efficiency. Skill means rather proficiency, or dexterity, in the doing of a particular thing. It has reference to the person. But when we speak of a skilled machine workman, we have reference, not so much to the quality of the worker as to the quality of the work done, that is, to the product of his skill. The degree of skill which the machine workman possesses may, in fact, be much below that of the hand worker whom he displaces; but he is a more efficient workman and, therefore, commands the higher wage.

[2] Under conditions where the laborer can offer no resistance and the so-called iron law of wages operates to keep him down to the life line, machinery only adds uncertainty to his other woes. He is, as it were, cut out of civilization. Whenever

ordinarily, neither machinery nor the capacity for using it, he is practically shut out from all chance of participating in its benefits. His wages, of necessity, are limited by the standard of his efficiency. It is inevitable, therefore, that the unskilled laborer should, relatively at any rate, sink ever lower and lower in the scale of industrial society.

That we have been experiencing a transition period, not only with respect to the agricultural industry[1] but also with respect to all other industries, seems almost self-evident. I do not believe that the transition period is passed, nor do I believe that it ever will be safely and finally passed until the State, in the interest of the general welfare and in its capacity of agent for the whole social body, shall have provided for and required, as now so all but universally provided for and required in the more purely intellectual field, that every child shall be taught at least the rudiments of industrial art.

Monthly Wages — Sympathetic Variations in Wage Rates

McMaster[2] cites authorities showing that, in 1794, "in the states north of Pennsylvania," the wages of common laborers did not exceed three dollars per month, while "in Vermont, good men were hired for eighteen pounds a year, which was equal to four dollars per month, and out of this found their clothes." Speaking of wages, generally, in 1802, he says:[3] "The average rate of wages the land over was . . . sixty-five dollars a year, with food, and, perhaps, lodging." In 1811, "throughout central Pennsylvania eight dollars per month of twenty-six working days was paid to farm hands when fed and clothed."[4] At Adrian, Michigan, in 1849, according to an apparently reliable authority:

he presses upward and secures a larger share of an ever enlarging product, machinery becomes an uplifting force. — HENRY WHITE, "The Problem of Machinery," *American Federationist*, Vol. X, p. 86

[1] The introduction of improved agricultural implements and machinery during the latter half of the nineteenth century was a development of such importance as to amount to an industrial revolution in agriculture. — Report of the Industrial Commission (1901), Vol. X, p. xiv

[2] McMaster, "History of the People of the United States," Vol. II, p. 179.

[3] *Ibid.*, p. 617.

[4] *Ibid.*, Vol. III, p. 510.

"The most common labor with board is worth from $50 to $75 a year. A higher quality, in which some care and responsibility are added, is worth $100 to $120."[1] A similar report from Richmond, Massachusetts, made in the same year, states: "Men get from ten to sixteen dollars per month and boarded, for six months commencing in April."[2]

On the period from 1866 to 1899, I quote from a report of the Department of Agriculture,[3] as follows:

WAGES OF FARM LABOR PER MONTH, BY YEAR OR SEASON, WITH BOARD, BY YEARS AND BY GEOGRAPHICAL DIVISIONS[4]

	1899	1898	1895	1894	1893	1892	1890
United States . .	$14.07	$13.43	$12.02	$12.16	$13.29	$12.54	$12.45
Eastern States .	18.21	17.63	17.73	17.15	18.45	17.50	17.71
Middle States . .	15.93	15.33	15.73	15.60	16.51	15.78	15.61
Southern States .	9.70	9.45	8.68	9.04	9.92	10.02	10.10
Western States .	16.70	15.75	15.21	14.96	16.29	15.36	15.00
Mountain States .	25.10	23.94	19.87	19.94	23.37	21.28	20.64
Pacific States . .	24.97	23.30	20.54	22.60	25.63	24.25	22.50

	1888	1885	1882	1879	1875	1869	1866
United States . .	$12.36	$12.34	$12.41	$10.43	$11.07	$11.03	$12.38
Eastern States .	17.21	16.70	16.92	13.03	16.18	15.29	14.77
Middle States . .	15.41	15.24	14.71	12.37	14.78	12.25	13.33
Southern States .	9.90	9.90	9.92	8.46	8.65	7.03	7.62
Western States .	15.09	15.20	15.60	12.75	13.43	11.36	12.09
Mountain States .	21.99	19.74	27.08				11.78
Pacific States . .	25.08	24.37	23.73	25.88	28.12	25.44	29.47

[1] U.S. Patent Office Report, 1849–1850, p. 186.

[2] *Ibid.*, p. 92.

[3] Division of Statistics, Misc. Bulletin No. 22, p. 16.

[4] The geographical divisions used in this table "are composed as follows: *Eastern States* — Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut; *Middle States* — New York, New Jersey, Pennsylvania, Delaware; *Southern States* — Maryland, Virginia, South Carolina, North Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, Oklahoma, Indian Territory, Arkansas, Tennessee; *Western States* — West Virginia, Kentucky, Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, Kansas, Nebraska, South Dakota, North Dakota; *Mountain States* — Montana, Wyoming, Colorado,

The Department of Agriculture has also reported on the "wages of farm labor per month, by year or season, with board," for the year 1902.[1] The average rate for the whole United States is given as $16.40; but the average rates for the several geographical divisions are not given. In a letter dated September 16, 1904, the secretary states that it was deemed unwise for the department so to extend the report on this last investigation. He suggests, however, that for the purposes of this study it would be allowable to make use of such "apparent" averages as are indicated by the published report. Agreeable to this suggestion, I have averaged the wages reported for the states in the several groups and secured the following as the average wage rates in 1902: Eastern States, $19.85; Middle States, $16.61; Southern States, $11.85; Western States, $19.48; Mountain States, $28.91; Pacific States, $27.90. These figures are averages of averages and must, therefore, be taken with some allowance. Accepting as true the average rate for the several states as reported by the department, the rate here given for the Middle States is clearly too low, since Delaware, whose wage rate was $13.81, is given equal weight with New York, whose wage rate was $19.65. The rate here given for the Pacific States is likewise too low, since Oregon, whose wage rate was $25.98, is given equal weight with California, whose wage rate was $29.38. For the Southern and for the Western States the rate here given is probably too high, the highest rates being reported for the less populous states. For the other groups the rates here given are approximately correct.

By reference to the accompanying tables it may readily be seen that the average rate of wages for the whole of the United States

New Mexico, Arizona, Utah, Nevada, Idaho; *Pacific States* — Washington, Oregon, California" (U. S. Dept. Agr., Division of Statistics, Misc. Bulletin No. 22, p. 16).

The data for the years prior to 1879 have been changed to a gold basis and a correction has been made, of what was evidently a clerical error, in the rate reported for the Western States in 1866. For the purpose of making this correction the cost of board in the Western States, in 1866, was assumed to have been the same as in the Pacific States, where wages without board were practically the same at that date as in the Western States.

[1] U. S. Dept. Agr., Division of Statistics, Misc. Bulletin No. 26, p. 15.

was somewhat higher in 1899 and in 1902 than in 1866. It is very evident, however, that the line of wages for the whole of the United States is very largely controlled by the wage rates in the Southern States. It is hardly fair to strike an average of wages by considering together the wages of two such different classes of people as the whites and the blacks. We can avoid this incongruity for a considerable portion of the period under consideration.

Taking the number of agricultural laborers in the Mountain, Pacific, Eastern, and Western states (i.e. the whole of the United States, exclusive of the Southern States), to have been in 1899 as reported in 1900, we find that the average rate of wages per month, with board, was, in 1899, 17.31.[1] In like manner, the average monthly wage in the same region in 1890 is found to have been $15.81; in 1879 it was $13.14;[2] in 1869 it was $12.29.[3] The increase in the average rate per month, during the period from 1869 to 1899, was 40.8 per cent.

In the matter of general well-being the agricultural laborers, in the North at any rate, have, of course, shared the homes of their employers; clothing has certainly been cheaper in late years; and, altogether, it seems safe to say that the condition of the dependent white agricultural laborers is much improved.[4]

[1] In getting this average, I found first the total number of agricultural laborers in each of the geographical divisions named and then found the total wage payment in each group at the rates given in the table on page 78. The sum of these wage payments divided by the total number of agricultural laborers in all the groups gives the quotient $17.31.

[2] The number of agricultural laborers in 1879 is assumed to have been the same as that reported in 1880, and the average rate of wages in the Mountain States is assumed to have been the same as was reported for the Pacific States.

[3] The number of agricultural laborers in 1869 is assumed to have been the same as was reported in 1870, and the average rate of wages in the Mountain States is assumed to have been the same as was reported for the Pacific States.

In the matter of the 20,321 agricultural laborers reported by the Ninth Census as being in the territories, it should be noted that these have been apportioned somewhat arbitrarily, as follows: to the Mountain States, 15,000; to the Pacific States, 1500; to the Western States, 3821.

[4] Eine weitere Verbesserung des Arbeitereinkommens ist in der vermehrten Kaufkraft des Geldes zu suchen. Sowohl die Kleidungsstücke als auch andere Gebrauchsartikel sind durch die hervorragende Anwendung der Machinenarbeit in der Industrie bedeutend im Preise heruntergegangen; dazu sind auch die

The accompanying table discloses a very strong tendency in the wage rates of the different parts of the country, especially in the region where white laborers are employed, to rise or fall together. The reason for this sympathetic fluctuation in rates lies, partly, in the somewhat characteristic dispositions of Americans to go wherever there is a prospect of more profitable employment,[1] and partly in the ready means of communication and transportation.[2] That the fluctuations are most marked in the Pacific and Mountain States is largely due to the less perfect means of communication and transportation and to the further fact that farming operations in those regions are rather closely confined to the production of a very few different crops, upon the productiveness of which depends practically the whole of the demand for labor.[3]

Lebensmittel meistens billiger zu kaufen. Der Arbeitslohn ist also nicht nur im allgemeinen absolut, sondern auch im Verhältnis zu dem Preise der notwendigen Lebensmittel gestiegen. Inwieweit allerdings die landwirtschaftlichen Maschinen zur Verbilligung der Lebensmittel beigetragen haben, lässt sich zahlenmässig nicht bestimmen. Wir können uns sehr wohl denken, dass die Intensität des Betriebes, die Anwendung der Maschinen, die Produktion so gesteigert haben, dass sie eine Verbilligung der Lebensmittel zur Folge hatten. . . . Wir denken dabei besonders an das klassische Land der Maschinenanwendung, an Amerika, welches noch vor wenigen Jahren der deutschen Getreideproduktion am gefährlichsten war. Wie hoch sind dort die Arbeitslohne und wie billig ist das Getreide! — BENSING, "Einfluss der landwirtschaftlichen Maschinen," p. 73

[1] The United States perhaps affords the highest example of a body of labor prepared and equipped to seek its best market wherever that market may be. — WALKER, "Wages," p. 180

L'Americain de pur sang a cela de commun avec le Tartare, qu'il est campé et non fixé sur le sol que ses pieds foulent.— M. CHEVALIER, "Lettres sur l'Amérique du nord," Vol. I, p. 196

[2] The mobility of capital and labor depend upon two factors, (1) means of transport, (2) knowledge of markets. Both of these elements have been influenced by machinery. — NICHOLSON, "Effects of Machinery on Wages," p. 104

[3] The greatest irregularity of employment in the North, particularly in the Northwest, is found where the farmers are engaged in raising one or two staple crops to the neglect or exclusion of any wide system of diversified industry. . . . There was of that irregularity far more in the early days of the West than there is to-day, because the great central states of the North, where over half of our products are raised, are tending naturally and inevitably, though slowly, toward a diversity of crops that keep the men engaged on the farms for a greater relative proportion of the year; and thus irregularity of employment, owing to this change, is decreasing. — L. G. POWERS, "Report of the Industrial Commission," 1901, Vol. X, p. 172

The Influence of Machinery upon the Life and General Welfare of the Independent Farm Operators

Statistical data showing the changed condition of the independent farm operators, separate and apart from the dependent operators, are not at hand. It will be worth while, however, to note what showing can be deduced concerning the income of the independent farm operators from the average income per agricultural worker during the twenty-year period from 1880 to 1900.

The value of agricultural products, per capita of persons ten years of age and over engaged in agriculture, as reported by the Tenth, Eleventh and Twelfth censuses for the United States and for the several geographical divisions, was as follows:[1]

	1900	1890[2]	1880
United States	$454.37	$287.19	$286.82
North Atlantic division	620.20	380.47	420.41
South Atlantic division	229.01	175.46	165.26
North Central division	672.59	357.05	369.39
South Central division	269.19	206.89	187.87
Western division	723.72	433.95	506.25

Considering only the data for the United States, as a whole, we have found[3] that in 1879, 1890, and 1899, the average monthly wage of dependent farm workers was, respectively, $10.43, $12.45, and $14.07, — an increase of 34.9 per cent in the twenty-year period. But the average value of agricultural products per farm worker for the years 1880, 1890, and 1900

[1] For data of value of products, see Twelfth Census, Agriculture, Vol. I, p. 703.

[2] The low valuation reported by the Eleventh Census was not the result of a decreased production; but rather, if it can be be proper to use the term at any time, to an overproduction. Take, for illustration, the case of corn: The corn crop produced in 1889 (the crop reported upon by the Eleventh Census) was so greatly in excess of the production in previous years that not only the price per bushel but the total value of the crop fell below that reported for any one of the nine preceding years. The same statement applies, more or less, to most of the staple farm crops for that year. (See U. S. Dept. Agr., Year Book, 1901, pp. 699 *et seq.*)

[3] See p. 78.

was, respectively, $286.82, $287.19, and $454.37, an increase of 58.4 per cent for practically the same twenty-year period.[1]

It is self-evident that if the increase in the income of the dependent class alone is represented by 34.9 per cent, while the increase in the income of all agricultural workers — dependent and independent taken together — is represented by 58.4 per cent, then the increase in the income of the independent class alone could be indicated only by a much higher number. How much higher we cannot tell, probably not less than 75 or 80 per cent. For the period from 1850 to 1900 the rate should, doubtless, be more than doubled.

The independent farmer of the present day, who has hired workmen, does not find it needful to work always at the same laborious tasks he sets for his employees. At harvest time it is not the hired man but the farmer himself who tends the machines and does the lighter work. Farm buildings are more substantial and supplied with more conveniences than they were fifty, or even twenty, years ago. Good roads abound, and probably not less than one fourth of the farmers now have the advantages of a free delivery of mail.[2] Telephone service between farmhouses and connecting with the neighboring towns or cities is by no means uncommon. Railway and electric-car lines run through the farming districts, and where formerly there was a back-country farmhouse there is now, not infrequently, a suburban home. These advantages enable the modern farmer to keep well abreast of the times and to inform himself concerning measures and events nearly, if not quite, as well as the average resident of the towns.[3]

[1] Excluding the Southern States, the corresponding showing for this twenty-year period is, for dependent workers, an increase of 31.7 per cent; for all farm workers, 71.2 per cent.

[2] The Superintendent of Free Delivery, in a letter dated January 27, 1903, stated that on February 1, 1903, there would "be 13,108 rural routes in operation" and that each carrier "serves an average of 100 families."

[3] The social and ethical sides of farm life are also making progress through the freer intercourse with the world, afforded by improved highways and by the extension of trolley lines. The contact of the younger generation with the life of the city is making new and more progressive methods of living almost a necessity. To-day, on many farms, the 'best room' is none too good for the family. Musical

It is rare, indeed, that the farmer of the present day cannot afford to send his children to school for at least six months of each school year during the greater portion of their school age. Our high schools and universities and especially our agricultural colleges (which, twenty years ago, were hardly known, except on paper)[1] furnish ample evidence both of the greater interest of the farming classes in higher education and of their fitness for the higher lines of work.

Whether we look to the external signs of comfort and general welfare or to the character of the farmhouses, there appears overwhelming evidence of a great change for the better with respect both to the dependent and independent classes,[2] the greater advantage appearing, however, to be in favor of the independent class.

To ascribe these improved conditions to the introduction and use of machine power alone would doubtless be to overstate the truth, and yet, even waiving the impracticability of providing the requisite food supply by the earlier methods of culture, it is not at all clear that, under those earlier methods of heavy and exhaustive toil, men could be able effectively to interest themselves in affairs of

instruments are found in a large proportion of the country homes; a daily paper, some of the best magazines, and often the leading novel of the day are not uncommon. . . . The attractiveness of our rural communities is growing. The movement of the population which has been so strongly toward the cities is now turning toward the country. Improved highways and the extension of trolley lines are bound to encourage this tendency. If formerly country people have sought homes in the cities, it is evident that the people of to-day are appreciating, as never before, that the country offers the strongest inducements for the building up of homes where health and the comforts of life can be enjoyed. — CHAS. S. PHELPS, "Is there a Decadence of New England Agriculture?" *New England Magazine*, Vol. XXV, pp. 382–383

[1] U.S. Dept. Agr., Year Book, 1899, p. 173.

[2] But most have a false idea of farm life as it is to-day. The wife need not be the drudge she was once. Bearings have shifted, things are done differently, life runs smoother and better. More is accomplished with less wear of muscle and nerve. People work easier and do more, have greater leisure for recreation and self-culture. Much that the wife did formerly is provided for in other ways. . . . Advanced methods have made farming more profitable, easier indoors and out, have carried to the thinly settled country most of the refining influences and many of the advantages of city life. — CLARENCE E. BLAKE, "Abandoned Farms as Homes for the Unemployed and City's Poor," *New England Magazine* (N.S.), Vol. XXIV, p. 582

government, social relations, and education in any degree comparable to that now common among the farming classes in this country.[1]

Consider how much lighter farm work now is than it was fifty years ago, before the introduction of machinery. How infinitely easier it must be to ride in the spring seat of a reaping machine, with no harder task at hand than that of keeping the horses out of the grain, than it would be to shuffle wearily along that same way, with bended back and with the perspiration springing from every pore, cutting an eight- or ten-foot cradle swath. And how much preferable to pitch sheaves to a threshing machine, or to work on the straw stack for a day or two, than to labor all through the winter months flailing and winnowing grain.[2] It is much more delightful to have a sulky plow, with the option to walk or to ride, as inclination may direct, than to be compelled to trudge all day over the yielding soil, till your limbs grow heavy and you stumble at evening when you strike the beaten pathway leading to your home.[3]

The ultimate and general effect of machinery upon farm laborers and, of course, upon all farm workers, has been quite thoroughly and pretty accurately summarized as follows: "As to the influence of machinery on farm labor, all intelligent expert observation declares it beneficial. It has relieved the laborer of much drudgery; made his work easier and his hours of service shorter; stimulated his mental faculties; given an equilibrium of effort to mind and body; and made the laborer a more efficient worker, a broader man, and a better citizen." [4]

[1] The elimination of exhausting manual labor by the substitution of powerful machinery for puny arms has emancipated labor in our day from its hardest tasks, and has given to the worker both inclination and leisure for the development of his intellect in various ways that were impossible under former conditions. — A. E. Outerbridge, Jr., "Machinery and the Man," *Scientific American Supplement*, Vol. LI, p. 21235

[2] Threshing was then, as it remained till our time, when it has been almost superseded by machinery, the chief farm work of the winter. — Rogers, "History of Agriculture and Prices," Vol. I, p. 15

[3] To follow the team in the furrow, day after day, is very tiresome work and has the effect of giving the boy a heavy awkward gait by stiffening the lower limbs — a condition from which he seldom if ever recovers. — M. L. Dunlap, U.S. Agr. Report, 1863, p. 417

[4] J. R. Dodge, American Farm Labor, in Report of the Industrial Commission, 1901, Vol. XI, p. 111.

The work of women on the farms has been much lightened by machine power — not so much, however, by machines with the aid of which a woman does the same work as formerly, as by machines which have taken the work entirely from the farm,[1] as, for example, spinning and weaving, soap-making[2] and candle-making,[3] which were formerly well-accepted parts of women's work on the farm and generally, also, in the towns. At the present time, throughout probably the greater part of the country, cheese- and butter-making is ordinarily done away from the farm, and in some parts of the country, as, for instance, in North Dakota, even the coming of a threshing crew fails to add materially to the work of the women on the farm, for the crews bring a cook-wagon and provide their own meals.[4]

Of the machines used by women on the farm, that of the sewing machine is, doubtless, first in importance; the washing machine and the apple-paring machine are contrivances of no mean worth. For the rest, there may be found, instead of the andiron and crane, or the Dutch oven and outoven of pioneer times,[5] very conveniently arranged stoves and ranges; also egg-beaters and can-openers and a host of other articles of which the housewife of fifty years ago knew nothing, not to mention incubators, milk separators, etc. The most of these things belong rather in the class of tools and utensils; nevertheless, they indicate the lighter character of the work which women have now to do on the farms than fell to the lot of women before the era of machine power made such conveniences possible.

The Influence of Machinery upon the Physical and Mental Nature of Man

It may be assumed that the occupation of a man goes far toward determining his physical and mental health.[6] This fact is indeed, as I understand it, the basis of much of the argument

[1] McMaster, History of the People of the United States, Vol. I, p. 97.
[2] Smith, Colonial Days and Ways, pp. 69, 115.
[3] Earle, Home Life in Colonial Days, p. 35.
[4] Report of the Industrial Commission, 1901, Vol. X, p. 851.
[5] McMaster, History of the People of the United States, Vol. V, p. 154.
[6] Farr, Vital Statistics, pp. 394 *et seq.*

both for and against the use of machine power. So far as routine work is concerned, I venture to say that the evil is not inherent in, nor peculiar to, the use of machine power.

The primary purpose and usual effect of the use of any machine is the production of utilities at a less expenditure of time, energy, and money.[1] But this is only another way of saying that, when aided by machine power, a given expenditure of time, energy, and money will produce a greater quantity of utilities. Utilities are the means of satisfying wants; and the satisfaction of wants is essential to life and happiness. The use of machinery, by supplying wants, does, therefore, one of two things: either it enables a larger number of persons to get a living, or it enables a given number "to get a better living."[2] Anyone will, I think, admit that the utilities supplied by machine power have not all been consumed in better livings. A very great part of this additional means of satisfying wants has been devoted to the maintenance of a more numerous population. That this is true must be self-evident when we consider how greatly the supply of utilities has been increased by the use of machinery,[3] and how utterly impossible it would be for the labor force now in existence, unaided by machinery, to provide even the ordinary necessaries of life as we now count necessaries.[4]

By lightening the tasks of those who labor with their hands, and by increasing the quantity of the necessaries of life which a given amount of labor can procure, machinery has not only favored a higher standard of living, but has increased the chances

[1] Les outils ne sont que des machines simples et les machines ne sont que des outiles compliqués que nous ajoutons à nos bras pour en augmenter la puissance; et les uns et les autres ne sont, à beaucoup d'égards, que des moyens d'obtenir le concours des agens naturels. Leur résultat est évidemment de donner moins de travail pour obtenir la même quantité d'utilité, ou, ce qui revient au même, d'obtenir plus d'utilité pour la même quantité de travail humain. — J. B. Say, "Traité d'économie politique," p. 85

[2] Powers, Labor Making Machinery, p. 27.

[3] See page 45.

[4] Selbst der Aermste hat in unserer Arbeitstheilung doch mehr zu geniessen als wenn er im ungeselligen Zustand lebte: die bei uns am übelsten gestellt sind, Kränkliche ohne Vermögen, Familienväter mit allzu vielen Kindern, etc., würden im Urwalde einfach verhungern. — Roscher, "Grundlagen der Nationalökonomie" (edition of 1900), p. 166

of attaining it.[1] Moreover, the use of machine power has made it possible for many now to devote themselves wholly to intellectual pursuits without involving either the enslavement or the degradation of others.[2]

Looking at the question from the standpoint of the whole social body, there can be no other conclusion than that the use of machinery, by increasing the supply of utilities and by making utilities more accessible,[3] has opened the way to a greater number, not only to live and to work,[4] but to develop themselves and to make the most of themselves which their inherent qualities may allow.

[1] To-day the world obtains commodities of excellent quality at prices which even the preceding generation would have deemed incredible. . . . The poor enjoy what the rich could not before afford. What were the luxuries have become the necessaries of life. The laborer has more comforts than the farmer had a few generations ago. The farmer has more luxuries than the landlord had and is more richly clad and better housed. The landlord has books and pictures rarer, and appointments more artistic, than the king could then obtain. — CARNEGIE, "The Gospel of Wealth," p. 4

[2] If every instrument, at command, or from foreknowledge of its master's will, could accomplish its special work . . . if the shuttle would weave, and the lyre play of itself; then neither would the architect want servants, nor the master slaves. — ARISTOTLE, "Politics," Bk. I, sec. 4 (translation by Edward Walford)

[3] There is no fact in modern history more easily demonstrated than that the products of steam-driven machinery are mainly consumed by the common people — the masses. — GUNTON, "Principles of Social Economics," p. 147

Quand je vous ai prouvé, messieurs, que l'introduction des machines expéditives, telles que le moulin à farine, ne diminue pas les moyens d'existence de la classe laborieuse, et n'a que l'inconvénient, assez grave à la vérité, de changer la nature de ses occupations, je n'ai pas complètement rendu justice aux machines. Le fait est que, dans la plupart des cas, elles sont favorables aux ouvriers mêmes dont elles semblaient supprimer le travail. Tout procédé expéditif, en reduisant les frais de production, met le produit à la portée d'un plus grande nombre de consommateurs. L'expérience prouve même que le nombre des consommateurs s'augmente dans une proportion bien plus rapide que la baisse du prix. — J. B. SAY, "Cours complet d'économie politique," Vol. I, p. 193

[4] In der Behauptung, dass die Maschinen viele Arbeiter brotlos machen, liegt etwas Wahres aber noch mehr Irriges. In gewissen Fällen werden allerdings viele Arbeiter infolge einer neu eingeführten Maschine brotlos, aber ganz falsch ist die Ansicht, dass die Bevölkerung überhaupt durch Einführung des Maschinenwesens vermindert werde. Die Ausdehnung des Maschinengebrauches ist sogar eine der Hauptursachen der gestiegenen Bevölkerung gewesen, denn dadurch wurde die Erzeugung von Nahrungsmitteln, Kleidern und anderen Gütern so vermehrt, dass viel mehr Menschen erhalten werden können. Nicht bloss eine allgemeine Vermehrung der Bevölkerung hat in den vergangenen Jahrzehnten

With reference to the workers themselves, we may safely say that men who have worked for years with machinery are, on the average, quite as strong and healthy, and at least as intelligent, as were men employed in the same industries before machine power was introduced. They certainly compare most favorably, too, with the average workman among those who now have little or nothing to do with machinery.

That routine work, which is persisted in and made one's principal occupation long after the worker has fully mastered it and developed his efficiency in that line to the limit of his capacity, tends to narrow the intellectual field of the worker and to depress his spirit may be freely admitted. The human mind is continually opening to new wants and seeking the means of satisfying them.[1] In proportion, therefore, as the ambition of the individual worker and his capacity for accomplishing new and greater tasks prompt him to advance in any line of activities, just so will he tend to become despondent and dissatisfied and wearied with too long continuance in any routine employment. Under such conditions the health of the strongest worker must eventually give way.

It is to be noticed, however, that a certain amount of routine is good for a person. No one ever acquires any high degree of skill or proficiency in any line of work until he has thoughtfully and systematically repeated its essential features over and over and made the doing of the task a habit — to be done, when occasion demands, with little or no thought concerning the manner of the doing. The everyday business of dressing ourselves, or of walking, would involve an enormous waste of time and patience if we were compelled to learn anew each day; and the still more common routine employment of carrying food to our

stattgefunden, sondern auch selbst in solchen Gewerben, in welchen die Maschinenanwendung zugenommen hat, ist die Zahl der Arbeiter oft weit grösser geworden. — F. G. SCHULZE, "Nationalökonomie," Leipzig, 1856, p. 44 (quoted by Franz Bensing in "Der Einfluss der landwirtschaftlichen Maschinen," p. 5)

[1] It is absurd to say that human beings can produce too much of everything needed for the satisfaction of human desire, since the satisfaction of one desire but awakens a new and wider desire, and there can be no end to the demands, the cravings, the yearnings of the being we call man. — HENRY GEORGE, JR., *Chicago Record-Herald*, May 3, 1903

mouths and of chewing it, always in the same old way, would become unbearable if routine were of itself a thing detrimental to the well-being of persons and always to be avoided.

It is to be noted, also, that routine work is not confined to those employments which require the use of machine power. As a matter of fact, machines can be used to advantage only when the thing to be done by the machine is routine work. The tendency is, therefore, always to give over to the machine[1] the routine part of any work and to leave the more varied employment to the person in charge. The business of weaving, by the former hand method and by the present machine method, is a case in point.[2] Routine work is found quite as frequently in other occupations, as for example, in that of bookkeeping, or of teaching music, or of repairing boots and shoes. It is accompanied, not infrequently, with heavy and exhaustive labor, as in the case of hodcarriers and of stonemasons. If we look to the business of many of our common laborers on the street, or on the railroads and canals, or at boat wharves, we shall find many instances of routine employments such as the worst of machine-driven workmen not only would not but could not endure.

It is not so much the fact of routine or monotony of work as the far more serious fact of monotony of life which depresses and degrades the workman.[3] The boy who is assigned lessons

[1] New machinery, when just invented, generally requires a great deal of care and attention. But the work of its attendant is always being sifted; that which is uniform and monotonous is gradually taken over by the machine, which thus becomes steadily more and more automatic and self-acting, till at last there is nothing for the hand to do but to supply the material at certain intervals and to take away the work when finished. — MARSHALL, "Principles of Economics" (3d ed.), Vol. I, p. 341

[2] Nothing could be more narrow or monotonous than the occupation of a weaver of plain stuffs in the old time. But now one woman will manage four or more looms, each of which does many times as much work in the course of the day as the old-time hand loom did, and her work is much less monotonous and calls for much more judgment than his did. — MARSHALL, "Principles of Economics" (3d ed.), Vol. I, p. 342

[3] As Roscher says, it is monotony of life much more than monotony of work that is to be dreaded; monotony of work is an evil of the first order only when it involves monotony of life. — MARSHALL, "Principles of Economics" (3d ed.), Vol. I, p. 342

that are too hard for him is disposed to quit his books, and he languishes if compelled to remain by them. On the other hand, if the tasks are suited to his capacity and he masters them, he is usually proud of his achievements and anxious to do more; and if, instead of being assigned further work, he is required to do the same problems over and over again for, seemingly, no better object than that of being dutiful, he becomes dissatisfied and discouraged. In either case there is degradation and loss of power.

The grown-up man is only an older boy. He delights to learn new things. He wants to be ever moving forward in the satisfaction of new wants; and if for any reason, as from the consciousness that the length of the working-day or the intensity of his employment exacts too much for his strength or from a feeling that he is subject to some undue disadvantage, he finds that his natural powers are being overtaxed or that he cannot advance as rapidly as he thinks he should, he becomes dissatisfied and discouraged; and the longer he stays at his post, the less prepared he becomes to go into another employment. Hence arise the despair and abandon which lead to reckless living and, occasionally, to riot.

It is idle to say that the mere fact of working with a machine tends to narrow the intellectual capacity of the worker. As well might one say that it is injurious to a pupil to give attention to the more skillful work of his teacher.[1]

The mere fact of working with a machine and of being compelled to follow its orderly processes tends to develop in the mind of the operator, unless he be a perfect blockhead, a more or less perfect comprehension of the plan which was in the mind of the inventor. From having a conscious perception of the purpose of the inventor to noting defects in the means provided for the execution of it, is a step so easy and so obvious that it needs no discussion here. Every such conscious

[1] It is thought that educates — the contact with quick and fertile minds; and it matters not whether this contact be produced by a voice or a book or a machine: the result is the same. — WASHINGTON GLADDEN, "Working People and their Employers," p. 20

perception of an inventor's plan, or purpose, and every notation of defect in the means provided for its execution, involves a mental effort and a development of intellectual power just as certainly as, and, frequently, with far more beneficial results than, does the conjugation of a Greek verb or the reading of a page from the Æneid. The operator of farm machinery is especially favored in this respect;[1] because, ordinarily he has charge of a complete machine and must understand it in order that he may keep it in repair.[2]

The simple fact that it requires the exercise of a certain degree of intelligence for the successful operation of a machine, together with the well-known fact that machine workmen continue to command higher wages than other workmen engaged in the same industries, should be conclusive evidence that the use of a machine does not impair the intellect of the operator. Anyone may be presumed to know that it requires a higher grade of intellect to operate a steam plow than it does to operate a hoe, and that the operator of the steam plow commands the higher wage.

It is significant of the mutual relationship between the possession of intellectual power and the ability to operate machinery that, according to the returns of the Twelfth Census, the North

[1] Wer jemals eine landwirtschaftliche Maschine in ihrer Thätigkeit beobachtet und acht darauf gehabt hat, wie der Arbeiter sich drehen und wenden muss, wie er die grösste Aufmerksamkeit auf jede Bewegung der Maschine richten muss, wird zugeben, dass sie einen schädlichen Einfluss auf den geistlichen Zustand des Arbeiters nicht hat. Das Umgekehrte ist vielmehr der Fall. Die Arbeiter sind durch die Beschäftigung mit solchen Maschinen viel intelligenter und geschickter geworden, so dass es ihnen nicht nur möglich ist, in der Landwirtschaft einen guten Verdienst zu finden, sondern auch in anderen Gewerben. Ihre Erwerbsthätigkeit ist mit einem Wort durch die Maschinen eine bessere und höhere geworden, so dass ihnen jederzeit der Übergang von einem zum anderen Gewerbe ermöglicht ist. Das ist unstreitig ein Vorteil, den der landwirtschaftliche Arbeiter durch die Beschäftigung mit Maschinen vor dem industriellen voraus hat. — BENSING, "Der Einfluss der landswirtschaftlichen Maschinen," p. 76

[2] On the whole the effect of the use of machinery has been to raise the intelligence and skill required on the part of those who use it, whether hired laborers or farm owners, and this is said to have resulted in improving the intellectual status of the American farmer. — Report of the Industrial Commission, 1901, Vol. X, p. xiv

Atlantic States, having 44.2 per cent of the total population of the country, ten years of age and over, engaged in manufactures, mechanic arts, trade, and transportation, reported only 15.8 per cent of the total number of illiterates, ten years of age and over, and only 27.9 per cent of the total number of deaths, occurring during the census year, from "injuries by machinery"; while the Southern States (South Atlantic and South Central divisions), having but 16.9 per cent of the total number, ten years of age and over, engaged in manufactures, mechanic arts, trade, and transportation, reported 66.9 per cent of the total number of illiterates, ten years of age and over, and 39.6 per cent of the total number of deaths from "injuries by machinery."[1]

It is safe to say that the people in the Southern States employ, relatively, even less of machinery in agriculture than they do in manufactures, mechanic arts, trade, and transportation. Accepting this as a fact, and bearing in mind the showing above made touching the matter of education and the personal injuries resulting from the use of machinery, it is not difficult to concur in the opinion of the English writer who held that "the expense of ignorance is the greatest in the obstructions which it presents to the introduction of machinery"; that "notwithstanding the progress of machinery in agriculture, there is probably as much sound, practical, labor-saving invention and machinery unused as there is used; and that it is unused solely in consequence of the ignorance and incompetence of the workpeople."[2]

[1] For statistics of illiteracy, see Twelfth Census, Population, Vol. II, page c.

The total number of deaths reported as resulting from "injuries by machinery" was 333; of these, 80 were reported from the North Atlantic States and 132 from the South Atlantic and South Central States (Twelfth Census, Vital Statistics, Vol. II, Table 7).

[2] Edwin Chadwick, Esq., *Journal of the Statistical Society*, Vol. XXV, p. 516.

The less general use of improved machinery in the South than in other sections is cited in partial explanation of the slow rate of agricultural progress in that country and is itself explained by the lack of mechanical skill on the part of the negroes and by the cheapness of labor, which makes it more economical to employ hand labor in many operations which would be more cheaply done by machinery where labor is more expensive (Report of the Industrial Commission, 1901, Vol. X, p. xiv).

The Use of Machinery and the Length of the Working-Day

The length of the working-day is shorter now than formerly. This shorter working-day is, however, only very indirectly a consequence of the use of machinery. So far as the individual employer is concerned, it would be quite correct to say that the shorter working-day is not so much because of as in spite of his use of machinery.

Every employer of labor expects to further his own interests by giving employment to others. Of course it may happen, and doubtless does happen occasionally, that men offer employment for the sake of the employee, but wages paid for such employment are really charity offerings in disguise. They have no part in a discussion concerning the usual and everyday relations between employers and employees.

In like manner we may say that every employee expects, in return for any service which he renders, to receive a certain payment which shall yield him a net return of satisfaction above sacrifice. Not only does he expect a net return, but he expects a higher net return of satisfaction above sacrifice than he could otherwise secure. In other words, he expects that it will be better or more profitable for him to undertake the employment offered, on the terms proposed, than to decline it and, perhaps, continue unemployed. Unless the workman has such an expectation, he should not undertake the work. It is not only proper[1] but most desirable that both the employer and the employee should have their expectations realized.

What is the attitude of the parties with respect to each other? Assuming a certain length of working-day, the position of the machine-using employer has been well stated by an English factory inspector as follows:

> The quantity produced must, in the main, be regulated by the speed of the machinery; it must be the interest of the mill owner to drive it at the utmost rate of speed consistent with these following conditions: namely, the preservation of the machinery from too rapid deterioration; the preservation of the

[1] In an ordinary contract both parties may, and usually do, gain by entering into the agreement (Amer. and Eng. Enc. of Law (2d ed.), Vol. XIV, p. 582).

quality of the article manufactured; and the capability of the workman to follow the motion without a greater exertion than he can sustain for a constancy.[1]

In short, it is the interest and purpose of the employer to so manage his establishment that he may secure from it the highest net return. He is producing for a market, and the more promptly he can supply the demands of that market the greater are his chances of making a profit; and hence the need for "the utmost rate of speed," and also for the most constant operation of the factors of production consistent with the conditions named. "The highest result with the least expenditure of means"[2] is the motto of the employer.

One factor, the machine, can work almost continuously day and night; and its efficiency is the same for the twenty-fourth hour as for the first hour or for any intermediate hour. Indeed, except as occasional stops may be requisite in order that the machine be kept in repair, the more continuously it is kept at work the less likely it is to deteriorate and the less likely it is to become worthless by reason of the invention of a better machine. Whether we consider the work of a machine for a day, for a year, or for its whole life-time as a producing agent, it is most effective and yields the highest net return to its owner when operated almost continuously.

The other factor, the workman, cannot work continuously for any great length of time. There must be portions of each day given to rest and recuperation; and the efficiency of the workman in the last hour of a long working-day is much less than in any other hour, unless, perhaps, in the first. In the average employment requiring the use of little or no machinery, we may assume that the first hour's work of each working-day is worth less than that of the second, or of the third, etc. But after the sixth or seventh hour the workman becomes increasingly less efficient. Moreover, if he works beyond his strength in any one day, and still more, if he works beyond his strength for any considerable length of time, he loses vitality; and loss of vitality, whatever

[1] See Karl Marx, Capital, p. 413.
[2] Brooks, The Social Unrest, p. 201.

may be the determining cause, means, inevitably, the degradation of the workman and a permanently decreased efficiency.[1]

The employer who is seeking the highest net return from an investment in labor should, therefore, if he is wise, be guided by a very different rule, in fixing the working-day for a man, from that which he should follow in fixing the length of the working-day for a machine.

If the term of employment is for a day only, and fresh workmen can be secured for each succeeding day, it may pay the employer to crowd his employees to the utmost limit of their strength throughout, perhaps, the full twenty-four hours of the day. But if the term of employment is for a year, or for life, with no chance of getting a substitute, then it will, ordinarily,[2] pay an employer to be more saving of his employees' vitality. He must now look to the preservation of the health and strength of his employees for the longer period of employment. It is only in this way that the employer can secure the highest net return on his investment. We know, however, that employers are sometimes both unwise[3] and unscrupulous,[4] and that even

[1] Walker, Wages, pp. 81–88.

[2] Slave-labor, under an intelligent profit monger, may require provision to be made for a full working life, though even in slavery it may sometimes pay to use up a slave by intense toil during a shorter period. — John A. Hobson, "The Economies of Distribution," p. 162

[3] I challenge the assumption which underlies the orthodox doctrine of wages; namely, the sufficiency of the sense of self-interest. Mankind, always less wise, and too often foolish to the point of stupidity, on the one side, and of fanaticism, on the other, whether in government, in domestic life, in the care of their bodies, or in the care of their souls, do not suddenly become wise in industrial concerns. The argument for keeping a laborer well applies with equal force to the maintenance of a slave. — Francis A. Walker, "Wages," p. 58

It shocks us to-day to hear the allegation that slave owners once discussed in convention the expediency of using a slave up in six years or four years in a certain occupation, and decided that it "paid" to use him up in four. — Ely, "Outlines of Economics," p. 182

[4] Certainly, it seldom happens that anyone in the position of a monopolist with respect to the purchase of labor power will look ahead for years and ask, Is not the course I am pursuing likely to diminish the labor supply? We do not find any action on the part of the purchaser of labor power which would indicate that this is the case. Take the example of the sweater and his victims. We do not find that he is held back from exercising his full power over them by the fear that he will cut off the future supply of labor power. He thinks that it will be forthcoming

in cases of employment for long periods employers will, not infrequently, discount the future at too high a rate and overwork their employees. The temptation to do this way is especially strong when free laborers are employed, because the services of a freeman are not ordinarily paid for in advance and for the whole period of possible employment, as in the purchase of a slave, but day by day, or month by month, and the death or total disability of the freeman relieves the employer from paying for the latter portion of the stipulated term, that is, for that portion of the term when the overworked laborer is least efficient. Moreover, except as provided for by the employer's liability acts, the employer of free labor has no financial interest in the welfare of a workman after the stipulated period of service is in any way terminated. Ambitious men will even overwork themselves. It is too much to expect that they should, voluntarily, be more solicitous for the welfare of their employees.

We have now to inquire concerning the effect of yoking together the machine and labor factors — the one yielding the highest net return when worked almost incessantly, either for short or for long terms of employment; the other yielding the highest net return when worked for longer or shorter periods, according to the length of the term of employment, but always, unless in the case of employment for a single day, when considerable portions of each day are allowed for rest and recuperation. It is like harnessing together a racer and a plow horse. From the standpoint of the employer, the machine and labor factors do not work in harmony. Under any conditions the employer is interested in getting as much service as possible from his employee and, when using machinery, is constantly impelled, according to the amount of his investment in the machine factor,[1] to spur on the labor factor to a longer working-day.

from some source; but even if not, he thinks, Before the supply dries up I will reap my harvest; I will make my fortune. — ELY, "Monopolies and Trusts," p. 132

[1] As machinery became more and more costly, the length of the working-day was lengthened until it became, even for women and children, sixteen and eighteen hours in cases not rare. Indeed, it has been generally longer where women and children have been the predominating labor force, because they are less powerful to resist oppression. — ELY, "Labor Movement in America," p. 109

The position of the employee is radically different from that of the employer. When making a contract for the sale of his labor power, the employee does not seek to establish a long working-day. He wants a certain amount of exercise, and he may even be glad to do some work for the pleasure which comes of achievement, but a long working-day, or a day of intense or otherwise exhaustive toil, is not desired. Not infrequently the employee assumes a position antagonistic to the interests of his employer. There remains, therefore, a wide margin within which the interests of employers and employees are adverse to each other; and the immediate effect of the introduction of machinery is rather to widen that area than to narrow it.

It would doubtless be impossible to enumerate all of the causes which have operated to give a shorter working-day in the more recent years. Public opinion has doubtless had some influence in this direction; but, for the most part, the various causes have found expression in, and have operated through, factory and labor laws.

Just how far the legislation thus far enacted in behalf of employees has operated to give farm laborers a shorter working-day it would, doubtless, be impossible to say. That the farm laborers have, in some degree, profited by such legislation may be fairly inferred from the testimony presented before the recent Industrial Commission and summarized in the report of that commission as follows: "Returns relative to the hours of daily service show the influence of general labor agitation for shorter hours in shortening the day of rural service. The reduction is very general, and greater where industrial and mechanical enterprise is dominant."[1]

It is to be expected, however, that the working-day should be longer on the farms than in the factories, for the outdoor life and more varied nature of the employment promotes health and makes it possible for farm workmen to continue their work through a given period with, relatively, much less cost of vitality.

That this is true will appear fairly evident from a consideration of the following table taken from Dr. Amos G. Warner's work on "American Charities."[2]

[1] Report of the Industrial Commission, 1901, Vol. XI, p. 82.
[2] Warner, American Charities, p. 107.

NUMBER LIVING AT STATED AGES OUT OF 1000 LIVING AT AGE OF TWENTY-FIVE

	Ages			
	35	45	55	60
Farmer[1]	898.5	821.19	730.06	639.54
Shoemaker	908.8	812.45	690.65	591.64
Weaver	920.3	822.78	696.04	581.20
Grocer	923.7	826.68	696.02	617.38
Blacksmith	918.8	804.84	672.02	547.02
Carpenter	905.5	812.18	676.58	576.38
Tailor	883.7	758.17	631.58	544.10
Laborer	902.1	789.35	652.85	557.51
Miner	915.1	810.79	646.97	535.69
Baker	924.1	787.35	620.51	518.04
Butcher	887.0	740.64	569.47	451.41
Innkeeper	861.7	684.99	491.13	395.38

As a matter of fact, the length of the working-day, the conditions under which work shall be done, and the wages to be paid in any industry are questions which must all, ultimately, be determined by economic law[2] and, to a very large extent, independently for each industry according to the nature of the work to be done and according to the character of the workers. But the economic law by which they are to be determined is not necessarily the economic law which is most favorable to employers, or to employees, or even to the interest of employers and employees jointly considered, any more than the policy of our federal

[1] The farmers and agricultural laborers are at present among the healthiest classes of the population classified according to occupation. The young farmer for some reason or other suffers a higher mortality than the laborer; but at thirty-five and upward the British farmer enjoys comforts which are beyond the reach of the laborers. — FARR, "Vital Statistics," p. 403

[2] If men can produce as much or nearly as much in eight hours as they can in ten, eight hours is destined to become the working-day; otherwise, not. The owner of a stoneyard in Chicago has stated that his men could do as much work in eight hours as in ten hours. Their work is fatiguing and little or nothing is gained by working the men over eight hours. Eight hours was the day's labor in that yard, and the owner said so far as his business was concerned the eight-hour question had solved itself. — POWERS, "Labor Making Machinery," p. 33

government is to be determined by the civil law most favorable to any particular state or section of the Union. Such questions are to be determined by that economic law which is most favorable to the whole social body, — to the State, — to humanity.[1]

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[1] Ausgangspunkt, wie Zielpunkt unserer Wissenschaft ist der Mensch. — ROSCHER, "Grundlagen der Nationalökonomie," p. 1.

CROP YIELDS AND PRICES, AND OUR FUTURE FOOD SUPPLY

By Professor G. F. Warren, Cornell University

(From Bulletin 341, College of Agriculture, Cornell University)

THE questions, whether our soil is exhausted and how we are to be fed in the future, are constantly being discussed in newspapers and magazines. The wildest sorts of statements are being made. Statistics are so persistently misquoted and misused that wrong impressions or absolute untruths are often accepted. The farmer is blamed for not selling enough food, and in the next breath is condemned for allowing any plant food to leave his farm. Many public-spirited citizens are planning all manner of solutions for existing conditions, sometimes with an entire misconception of what such conditions are. In the midst of all the excited discussion, it is well to stop long enough to examine the available facts and find out where we stand. There are two, and only two, sources of information on crop yields, the United States Census Reports and the reports by the Bureau of Statistics of the United States Department of Agriculture.

CROP YIELDS

Crop yields in the United States. The crop yields for the United States as reported by the census are given in Table 1. Of the six major crops, three gave their highest yield at the last census period and three had given a better yield at some previous period.

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Crop yields east of the Mississippi River. When crop yields for the entire United States are compared, the land considered in 1909 is different from that farmed in 1879. During that period,

TABLE 1. CROP YIELDS PER ACRE IN THE UNITED STATES, FROM THE CENSUS REPORTS

	1879	1889	1899	1909
Major crops				
Corn (bushels)	28.1	29.4	28.1	25.9
Wheat (bushels)	13.0	13.9	12.5	15.4
Oats (bushels)	25.3	28.6	31.9	28.6
Potatoes (bushels)		83.6	93.0	106.1
Hay and forage (tons)	1.15	1.26	1.28	1.35
Cotton (bales)	0.40	0.37	0.39	0.33
Minor crops				
Tobacco (pounds)	740	702	788	815
Barley (bushels)	22.0	24.3	26.8	22.5
Buckwheat (bushels)	13.9	14.5	13.9	16.9
Rye (bushels)	10.8	13.1	12.4	13.4
Rice (bushels)	22.7	28.7	26.3	35.8
Sweet potatoes and yams (bushels)	75.0	83.8	79.1	92.4
Hops (pounds)	567.2	780.1	884.9	911.1
Flax (bushels)		7.8	9.5	9.4
Kafir corn and millo maize (bushels)			19.4	10.8
Dry edible beans (bushels)			11.2	14.0
Sugar beets (tons)			7.2	10.8
Sugar cane (tons)			10.9	13.1
Sorghum cane (tons)			6.5	3.7
Dry peas (bushels)			9.7	5.5
Peanuts (bushels)			23.2	22.3
Strawberries (quarts)			1,701	1,788
Blackberries and dewberries (quarts)			1,239	1,129
Raspberries and loganberries (quarts)			1,258	1,252
Cranberries (quarts)			1,552	2,075
Currants (quarts)			1,445	1,329
Gooseberries (quarts)			1,380	1,109
Broom corn (pounds)		412.7	509.3	242.1
Hemp (pounds)		1,030.4	732.4	978.6
Chicory (pounds)			7,004	12,136
Mint (pounds)			21.8	19.3

large areas of arid land were brought into cultivation. The average yields on this new land are lower than those in the older states. Hence the yields of later years are lowered, not by the exhaustion of the soils in the older states, but by the addition of new land with low yields. It is therefore misleading to quote the

decrease in yield per acre of corn and attribute this decrease to soil exhaustion in the older states.

The only fair way of making a comparison is to consider the same region for each census period. Table 2 shows a comparison for the most important crops in states east of the Mississippi River. In this region the best crops of corn, wheat, potatoes, and hay ever produced were in 1909. The best yields of oats and cotton were in the year 1899, with 1909 second.

TABLE 2. CROP YIELDS PER ACRE IN STATES EAST OF THE MISSISSIPPI RIVER, FROM THE CENSUS REPORTS

Crop	1879	1889	1899	1909
Corn (bushels)	25.6	25.6	27.2	28.0
Wheat (bushels)	14.1	14.3	11.9	15.8
Oats (bushels)	24.2	27.5	32.6	29.5
Potatoes (bushels)		81.6	90.7	108.4
Hay and forage (tons)	1.08	1.24	1.17	1.29
Cotton (bales)	0.37	0.35	0.39	0.39

A still more accurate comparison is shown in Table 3. The states east of the Mississippi River are here grouped in five divisions and those west of the Mississippi in four divisions. . . .

A better method of comparing yields is on the basis of the reports by the Bureau of Statistics. The census figures are more accurate, but the census is taken only once in ten years. The crops vary from year to year, chiefly because of variation in rainfall. The census figures are therefore dependent on whether the year is one of good or poor crops.

The estimates published by the Bureau of Statistics are available for every year since 1866. At the present time these estimates are based on reports from every county in the United States that is of any agricultural importance. There are approximately 32,000 persons who send in crop reports. The yields per acre of the important crops are estimated with a fair degree of accuracy. The yield per acre of the corn crop of 1909 was 2 per cent less than that indicated by the census report; that of cotton was 3 per cent less. The estimated yield per acre of wheat was 2 per cent too high, for oats 6 per cent, and for potatoes 1 per cent too high.

TABLE 3. CROP YIELDS PER ACRE BY GROUPS OF STATES, FROM THE CENSUS REPORTS

		Corn (In bushels)	Wheat (In bushels)	Oats (In bushels)	Hay and Forage (In tons)	Cotton (In bales)	Potatoes (In bushels)
States East of the Mississippi River							
New England	1879	34.5	15.5	32.7	0.96		109
Maine, N. H., Vt., Mass., R. I., Conn.	1889	38.6	19.1	30.7	1.09		85
	1899	39.4	18.0	35.9	1.13		130
	1909	45.3	23.5	32.9	1.23		177
Middle Atlantic	1879	33.1	14.1	28.5	1.10		95
N. Y., N. J., Pa.	1889	32.8	16.7	27.4	1.29		70
	1899	34.0	14.9	30.9	1.19		95
	1909	32.2	18.6	25.5	1.32		107
East North Central	1879	34.6	16.8	31.8	1.17		
Ohio, Ind., Ill., Mich., Wis.	1889	34.3	15.7	34.5	1.30		91
	1899	38.3	12.9	37.4	1.22		85
	1909	38.6	17.2	33.3	1.38		101
South Atlantic	1879	13.3	8.8	9.9	0.84	0.35	
Del., Md., D. C., Va., W. Va., N. C., S. C., Ga., Fla.	1889	13.7	10.3	10.8	1.09	0.35	70
	1899	14.1	9.5	11.7	1.02−	0.39	77
	1909	15.8	11.9	15.5	1.02+	0.45	92
East South Central	1879	19.1	7.7	10.3	0.82	0.39−	
Ky., Tenn., Ala., Miss.	1889	20.7	10.6	12.1	1.06	0.35	81
	1899	18.4	9.0	11.1	1.03+	0.39+	63
	1909	18.6	11.7	13.4	1.03	0.32	82
States West of the Mississippi River							
West North Central	1879	37.4	10.6	28.9	1.32		
Minn., Iowa, Mo., N. Dak., S. Dak., Neb., Kans.	1889	36.4	13.2	30.9	1.26		90
	1899	31.4	12.2	32.0	1.34		95
	1909	27.7	14.9	27.5	1.33		92
West South Central	1879	14.0	6.6	17.0	0.83	0.47	
Ark., La., Okla., Tex.	1889	20.9	10.6	20.2	1.35	0.41	73
	1899	21.9	11.9	25.8	1.48	0.39	67
	1909	15.7	11.0	21.4	1.03	0.27	63
Mountain	1879	16.6	18.8	28.9	1.13		
Mont., Idaho, Wyo., Colo., N. Mex., Ariz., Utah, Nev.	1889	14.4	20.0	27.8	1.36		69
	1899	16.5	19.2	30.4	1.59		113
	1909	15.8	23.1	34.9	1.73		143
Pacific	1879	27.1	16.3	30.5	1.45		
Wash., Ore., Cal.	1889	30.2	15.0	28.4	1.49		95
	1899	25.2	15.6	31.4	1.44		129
	1909	24.0	17.7	35.3	1.73		131

TABLE 4. COMPARATIVE CROP YIELDS, FROM REPORTS OF THE BUREAU OF STATISTICS. CORN, WHEAT, OATS, BARLEY, RYE, BUCKWHEAT, POTATOES, HAY. THE YIELD OF 1866 CONSIDERED AS 100 PER CENT

Year	United States (Percentage of 1866 crop)	States East of the Mississippi River (Percentage of 1866 crop)
1866	100	100
1867	100	99
1868	104	102
1869	108	102
1870	109	109
1871	109	107
1872	112	111
1873	101	93
1874	94	95
1875	109	106
1876	100	99
1877	112	110
1878	115	112
1879	116	118
1880	110	114
1881	86	86
1882	104	104
1883	100	100
1884	107	99
1885	99	94
1886	96	96
1887	91	89
1888	101	107
1889	108	102
1890	89	88
1891	112	107
1892	99	96
1893	97	96
1894	93	102
1895	105	98
1896	109	104
1897	107	107
1898	116	117
1899	108	103
1900	105	101
1901	96	97
1902	119	116
1903	111	105
1904	114	111
1905	123	121
1906	123	120
1907	109	113
1908	112	113
1909	115	115
1910	113	121
1911	97	110
1912	126	120

Table 4 shows the comparative yields of corn, wheat, oats, barley, rye, buckwheat, potatoes, and hay, for every year since 1866. Each crop was compared with its 1866 yield as 100 per cent. These percentages were then averaged in order to get the percentage yield for each year. If one crop had more acreage than another, it is given proportionately more weight in determining the average. The figures are what is known as a weighted average.[1] This is the fairest possible way of comparing the yield of different acres, since it gives every acre equal weight.

The chart on page 107 shows the comparative yields for states east of the Mississippi River. This curve shows a period of general low production during the eighties and the early nineties. During that period prices were low and farmers were having hard times. Since 1896 the yields in these states have only once dropped below the 1866 crop; that was in the very dry year of 1901. Never before have the eastern states shown such high yields as in the last eight years considered. In four of these years the crops have been better than ever before produced. In every year the crops have been good.

* * * * * * * * * *

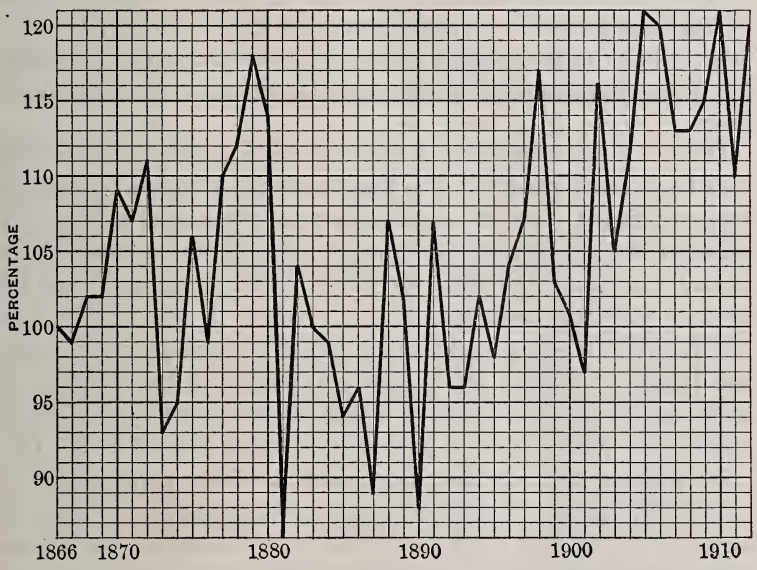
Why are crop yields increasing? The writer does not believe that changes in crop yields can be taken as a measure of soil

[1] The method of calculating the comparative crop yields, or the crop index, is best shown by an example:

	Acres Grown in 1912	Comparative Yield per Acre (1866 yield as 100 per cent)	Acres multiplied by Percentage Yield
Corn	107,083,000	115	123,145,450
Wheat	45,814,000	161	73,760,540
Oats	37,917,000	124	47,017,080
Barley	7,530,000	130	9,789,000
Rye	2,117,000	124	2,625,080
Buckwheat	841,000	105	883,050
Potatoes	3,711,000	113	4,193,430
Hay	49,530,000	120	59,436,000
Total	254,543,000		320,849,630

$$\text{Percentage yield, or crop index} = \frac{320,849,630}{254,543,000} = 126 \text{ per cent}$$

fertility. If so, then we must conclude that the longer land is farmed the richer it gets, because the Atlantic Coast states show the largest increase in crop yields. The striking increase is due to the better returns that crops now bring. Every farmer knows many ways of increasing his crops. Whenever prices rise, more fertilizers and better methods are used. In the states east of the



Comparative Crop Yields in States East of the Mississippi River. Yields of 1866 considered as 100 Per Cent

Mississippi River, in 1899, the average expenditure for fertilizer was 36 cents per acre of crops. In 1909 it was 78 cents.

Probably much more important than the expenditure for fertilizer is the increased attention that is being given to the care and use of farm manure. Methods of tillage also have been improved. Much land has been drained, so that wet spots which once lowered the average yield are now raising it.

It is certainly very unsafe to draw conclusions from crop yields as to whether our soils are running out. The yields are increasing, whatever the cause.

Crop possibilities. There are many ways in which it is possible to increase crops. There is much good land that is not now being used, but that will be used as soon as prices make it worth while. The use of more fertilizers, the better use of manure, and other methods of more careful farming are rapidly coming in as prices make it worth while.

There are millions of acres of good farm land in swamps, which we will farm as soon as we are convinced that it will pay to drain them. Shaler estimates that there are 3,000,000 acres of reclaimable seacoast marshland along the Atlantic coast of the United States.

There are other millions of acres on farms, made up of smaller areas from fractions of acres to large marshes, which are gradually being reclaimed. On the vast majority of American farms there are areas of land that can be brought into cultivation when prices warrant the work. In total, this is far more important than reclaiming the large swamps.

The writer made a study of 13 farms, containing 1060 acres, near Ithaca. On these farms nearly 210 acres of land are still in woods or stumps that will make excellent farm land when cleared. This land is just as good as any of the present cleared land. This is in addition to woodland that must be kept permanently in woods. During the past three years, on these farms, 17 acres of previously waste wet land and 63 acres of woodland have been turned into pasture, and 44 acres of pasture land and 7 acres of previously waste land have been taken for crops. This example is typical of the state. Probably more brush lines along fences and wet places have been reclaimed in New York in the last five years than in the preceding twenty-five years. Prices in New York are usually not high enough to justify one in clearing land all at once, but woodland and brush-land can be turned into pasture and be ready to clear cheaply in about twenty years, after the stumps have partly rotted. In this way the saving in cost of clearing may equal the value as pasture, and the two usually pay better than clearing at once by expensive methods.

The above conditions are typical not only of New York, but also of most of the farms in the eastern states. At the same

TABLE 5. AVERAGE WHOLESALE PRICES IN CITIES, 1840–1912

Year	Corn[1]: New York (cents per bushel)	Winter Wheat[2]: New York (per bushel)	Cotton[3] (Upland Middling): New York (cents per pound)	Potatoes[4] (cents per bushel)	Oats[5]: New York (cents per bushel)	Hogs[6] (per 100 pounds)	Beeves[7] (good to prime) (per 100 pounds)	Sheep[8] (good to choice): Cincinnati (cents per pound)	Butter[9] (cents per pound)	Eggs[10] (cents per dozen)	Comparative prices[11] (average for seventy-three years equals 100 per cent)
1840 . .	57	$1.12	8.9		36	$4.41	$3.71		16.0		75
1841 . .	60	1.18	9.5		45	4.75	3.82		17.1		81
1842 . .	61	1.17	7.9		40	4.14	3.24		17.6		75
1843 . .	54	1.04	7.3		30	4.33	3.28	1.1	14.8		63
1844 . .	50	0.97	7.7		32	4.50	3.23	1.6	17.6		63
1845 . .	51	0.99	5.6		37	4.00	3.42		16.0		67
1846 . .	65	1.12	7.9		41	4.53	3.64		16.5		77
1847 . .	84	1.38	11.2		46	5.34	4.13	1.2	18.4		86
1848 . .	63	1.33	8.0		43	5.14	4.10	1.5	17.3		78
1849 . .	61	1.23	7.6		36	4.88	4.72		17.8		80
1850 . .	61	1.30	12.3		43	4.06	4.41		16.8		84
1851 . .	63	1.09	12.1	73	44	4.83	4.45	2.3	16.8		85
1852 . .	66	1.11	9.5	64	45	5.44	4.90	1.8	21.3		85
1853 . .	71	1.36	11.0	47	48	5.97	5.46	3.1	21.3		93
1854 . .	77	2.00	11.0	98	53	5.34	5.43	3.6	19.9		109
1855 . .	94	2.30	10.4	93	59	5.66	6.09	3.9	23.1		119
1856 . .	69	1.76	10.3	59	45	6.53	5.95	3.0	21.4		99
1857 . .	73	1.58	13.5	100	53	6.88	6.23	2.8	23.1	16.9	107
1858 . .	68	1.17	12.2	79	47	5.23	5.04	2.0	19.6	16.0	88
1859 . .	86	1.46	12.1	58	51	5.59	5.78	2.8	20.8	20.9	98
1860 . .	73	1.38	11.0	49	42	6.28	5.46	3.6	18.8	17.4	91
1861 . .	59	1.28	13.0	48	34	4.67	5.08	3.4	15.4	14.4	81
1862 . .	59	1.31	31.3	45	45	4.03	5.11	3.4	18.5	15.8	96
1863 . .	83	1.52	67.2	50	74	5.16	5.85	4.5	23.3	20.8	142
1864 . .	144	1.99	101.5	88	92	9.54	8.20	5.6	38.6	26.3	210
1865 . .	124	2.05	83.4	76	83	12.69	9.94	6.8	39.3	29.4	205
1866 . .	88	2.30	43.2	71	54	10.59	9.21	5.6	44.4	28.4	162
1867 . .	117	2.84	31.6	71	70	7.36	9.03	5.1	32.6	27.4	155
1868 . .	120	2.46	24.9	102	81	8.91	9.38	4.7	43.3	32.1	164
1869 . .	100	1.18	29.0	70	74	10.27	8.93	3.9	41.4	31.3	145
1870 . .	99	1.31	24.0	76	60	9.50	9.14	4.1	34.6	31.3	137
1871 . .	77	1.60	17.0	102	62	5.13	7.63	3.5	32.3	25.0	121
1872 . .	70	1.62	20.5	49	49	4.31	6.89	4.9	29.4	26.3	111
1873 . .	63	1.76	18.2	83	48	4.46	6.63	4.8	30.0	28.0	115
1874 . .	85	1.46	17.0	87	59	5.60	6.51	4.8	33.0	28.0	121
1875 . .	82	1.33	15.0	70	63	7.48	6.84	4.9	30.3	25.8	119
1876 . .	63	1.35	13.0	47	44	6.94	5.81	4.8	30.9	22.9	103
1877 . .	58	1.63	11.7	88	42	5.55	6.07	4.5	27.1	21.1	104
1878 . .	53	1.25	11.3	49	33	3.84	5.23	3.9	27.1	16.9	85
1879 . .	47	1.17	10.8	78	34	3.44	5.08	4.0	22.4	18.0	85
1880 . .	55	1.30	12.0	47	42	4.61	4.88	4.7	29.3	16.9	91
1881 . .	62	1.31	11.3	69	45	5.93	6.20	4.9	28.6	22.2	103
1882 . .	76	1.32	12.2	93	54	6.00	7.18	5.0	33.6	22.9	116
1883 . .	64	1.16	10.6	68	44	6.17	6.53	4.7	28.5	23.4	102
1884 . .	61	1.00	10.6	49	36	5.54	6.03	4.8	28.0	22.9	95
1885 . .	52	0.94	10.5	46	37	4.24	5.78	4.1	23.8	19.3	84
1886 . .	47	0.89	9.4	64	39	4.09	5.76	4.6	27.3	19.3	87
1887 . .	49	0.88	10.3	61	37	4.89	5.19	4.5	24.6	21.0	87
1888 . .	59	0.94	10.3	78	36	5.65	5.67	4.7	25.1	20.8	94
1889 . .	43	0.92	10.7	57	29	4.68	4.65	4.8	23.9	18.7	83
1890 . .	44	0.92	11.5	91	34	3.95	4.96	4.8	21.8	19.0	88
1891 . .	67	1.06	9.0	93	46	4.42	5.55	4.7	23.8	20.9	97
1892 . .	55	0.79	7.6	45	36	5.16	4.50		23.5	19.1	77
1893 . .	46	0.69	8.2	67	34	6.55	4.84		25.2	21.1	84
1894 . .	57	0.58	7.7	61	35	4.97	4.52		20.9	16.4	76

TABLE 5. AVERAGE WHOLESALE PRICES IN CITIES, 1840–1912
(CONTINUED)

Year	Corn [1]: New York (cents per bushel)	Winter Wheat [2]: New York (per bushel)	Cotton [3] (Upland Middling): New York (cents per pound)	Potatoes [4] (cents per bushel)	Oats [5]: New York (cents per bushel)	Hogs [6] (per 100 pounds)	Beeves [7] (good to prime) (per 100 pounds)	Sheep [8] (good to choice): Cincinnati (cents per pound)	Butter [9] (cents per pound)	Eggs [10] (cents per dozen)	Comparative prices [11] (average for seventy-three years equals 100 per cent)
1895 . .	40	$0.70	6.3	43	25	$4.28	$4.93		18.8	16.6	66
1896 . .	29	0.78	7.9	20	23	3.36	4.27	3.1	16.7	15.4	59
1897 . .	31	0.97	7.2	33	23	3.59	4.77	3.8	16.8	15.5	65
1898 . .	37	0.96	6.0	51	30	3.81	4.88	3.9	17.5	16.3	71
1899 . .	41	0.80	6.6	42	31	4.04	5.39	3.8	19.7	19.3	73
1900 . .	46	0.81	9.6	37	27	5.08	5.39	3.7	21.2	17.1	75
1901 . .	56	0.80	8.6	56	37	5.96	5.59	3.3	20.1	18.9	82
1902 . .	68	0.84	8.9	60	45	6.97	6.56	3.8	23.2	22.6	95
1903 . .	56	0.86	11.2	52	41	6.06	5.06	3.8	21.5	23.2	88
1904 . .	56	1.11	12.1	73	42	5.16	5.19	3.7	19.7	24.8	92
1905 . .	57	1.03	9.6	40	35	5.29	5.22	4.6	23.4	26.0	88
1906 . .	54	0.87	11.0	55	38	6.24	5.36	4.6	23.3	23.9	91
1907 . .	62	0.96	11.9	49	49	6.08	5.81	4.7	26.7	26.5	98
1908 . .	71	1.05	10.5	71	54	5.80	6.00	4.1	24.5	26.5	102
1909 . .	76	1.25	12.1	69	51	7.57	6.45	4.4	26.5	30.6	111
1910 . .	65	1.12	15.1	43	47	8.94	7.02	4.7	29.1	32.8	112
1911 . .	66	0.97	13.0	77	46	6.75	6.73	3.4	25.7	29.9	104
1912 . .	76	1.09	11.5	91	57	7.60	8.40	3.8	30.0	33.1	119
73-yr. av.	66	$1.25	15.4	65	45	$5.71	$5.74	4.0	24.4	22.6	

[1] The prices of corn for 1840 to 1891 are from "Wholesale Prices, Wages, and Transportation," 52 Cong., 2 Sess., Senate Report 1394, Pt. 2, p. 7. The price for each year is the average of the average prices for January, April, July, and October. The prices for 1892 to 1912 are for "No. 2 corn" (U.S. Dept. Agr., Year Book, 1896, p. 579; 1900, p. 760; 1905, p. 662; 1909, p. 441; 1912, p. 563). The price for each year from 1892 to 1896 is the average of the average prices for August, September, October, November, and December. The prices for later years are for all months. In all cases in which monthly prices are given, the average of the high and the low is taken as the price for that month. The yearly average is the average of the monthly averages. Most of the corn sold is graded as No. 2. The months given are typical, so that the prices are comparable.

[2] Prices of wheat are from the references given in footnote 1 and are calculated by the method there given. Winter wheat, 1840 to 1891, Senate Report, p. 63. 1892 to 1912 is No. 2 red winter (U.S. Dept. Agr., Year Book, 1896, p. 580; 1900, p. 771; 1905, p. 673; 1909, p. 453; 1912, p. 575).

[3] Cotton prices are from U.S. Dept. Agr., Bureau of Statistics, Bulletin 9; U.S. Dept. Labor, Bulletin 114, p. 93.

[4] Potato prices are for Boston from 1851 to 1891, from Senate Report mentioned in footnote 1, p. 118. Prices 1892 to 1912 are for "fair to fancy" potatoes in Chicago, from U.S. Dept. Labor, Bulletin 114, p. 108. Potatoes average a little higher in Chicago than in New York.

[5] Prices of oats are from the reference given in footnote 1 and are calculated by the method there given (Senate Report, p. 32). Prices 1892 to 1912 are for No. 2 mixed (U.S. Dept. Agr., Year Book, 1896, p. 581; 1900, p. 779; 1905, p. 680; 1909, p. 465; 1912, p. 588). As in the case of corn and wheat, most of the product sold is graded as No. 2, hence the figures for different years are comparable.

time there is much land that is not worth farming that should be reforested, but not much of this is in crops at the present time. We still have much undeveloped land, but not of the kind that was opened in the Central West. We must now work for our new land and must be willing to pay the corresponding prices for the products.

PRICES OF FARM PRODUCTS

Comparative prices for 73 years. The wholesale prices in cities, of corn, wheat, cotton, potatoes, oats, hogs, beeves, sheep, butter, and eggs, from 1840 to 1912 inclusive, are given in Table 5. Details as to where the figures were obtained are given in the footnotes to the table. The average prices for the 73 years and the average prices for the last 8 years considered were as shown in Table 6.

[6] Prices of hogs are for "good to prime" in New York, 1840 to 1870 (Senate Report, p. 28). Prices 1871 to 1889 are for Chicago (Senate Report, p. 29). Prices 1890 to 1912 are for "heavy" hogs in Chicago (U.S. Dept. Labor, Bulletin 114, p. 94). The prices in New York are a little higher than in Chicago, hence the figures before 1871 are a little high. The prices are given for both cities for 1871 to 1891. The New York average for these twenty-one years is nearly 10 per cent higher than the Chicago average. The prices for Chicago from both references are given for 1890 and 1891. In these two years there is a difference of only 1 per cent (see footnote 11).

[7] Prices of beeves are for "good to prime" in New York for 1840 to 1891 (Senate Report, p. 25). For 1892 to 1912 the prices are for "good to choice" in Chicago (U.S. Dept. Labor, Bulletin 114, p. 93). The prices in New York are a little higher than those in Chicago. The prices are available for both cities in 1890 and 1891. In these two years the New York prices were 14 per cent higher than the Chicago prices. The prices in the table before 1892 are a little too high for exact comparison with the later prices (see footnote 11).

[8] Sheep prices 1853 to 1891 are for "good to choice" in Cincinnati (Senate Report, p. 31). Prices 1896 to 1912 are for "good to extra" (U.S. Dept. Agr., Year Book, 1900, p. 830; 1905, p. 747; 1909, p. 580; 1912, p. 694).

[9] Prices of butter 1840 to 1890 are for Boston from *Monthly Summary of Commerce and Finance of the United States*, May, 1900, Bureau of Statistics of the Treasury Department, p. 3153. Prices for 1891 to 1912 are for "state dairy, tubs, finest" in New York (U.S. Dept. Labor, Bulletin 114, p. 98). The prices are given for both cities for 1890 to 1898. For these nine years the prices were almost the same in both cities. They average less than 3 per cent higher in Boston. The figures are therefore comparable.

[10] Prices of eggs 1857 to 1895 are for Boston from *Monthly Summary of Commerce and Finance of the United States*, May, 1900, Bureau of Statistics of the Treasury Department, p. 3155. Prices for 1896 to 1901 are for "best fresh" in New York (U.S. Dept. Agr., Year Book, 1900, p. 835; 1905, p. 755; 1909, p. 588; 1912, p. 689). The prices are given for both cities for 1896 to 1898. For these three years the prices are nearly alike. In one year Boston was higher and in two years New York was higher. The prices therefore appear to be comparable.

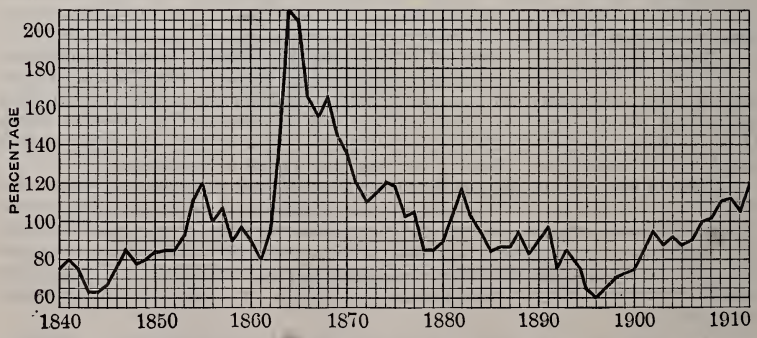
[11] The errors due to the change of cities in the case of beef and hogs would apparently make a difference of 2 per cent in the comparative price of all products. The opposite change in the price of potatoes would partly offset this. The percentages representing comparative prices from 1840 to 1891 are probably 2 per cent too high.

The table includes five crops and five animal products. The lowest prices ever reported for each class of products was in 1896. The general average for that year was 59 per cent of the average prices for 73 years.

TABLE 6. AVERAGE PRICES OF PRODUCTS FOR GIVEN PERIODS

	Average for Seventy-three Years	Average 1905 to 1912
Corn in New York (per bushel)	$0.66	$0.66
Winter wheat in New York (per bushel)	1.25	1.04
Cotton in New York (per pound)	0.154	0.118
Potatoes (per bushel)	0.65	0.62
Oats in New York (per bushel)	0.45	0.47
Hogs (per hundred)	5.71	6.78
Beeves (per hundred)	5.74	6.37
Sheep (per hundred)	4.00	4.29
Butter (per pound)	0.244	0.262
Eggs (per dozen)	0.226	0.287

The prices for the crops for the last 8 years considered are no higher than the average for the 73 years. The animal products are higher. This is primarily due to very low prices of animal products before 1870, when range was free. Since 1896 grains have been rising in price faster than meat.



Average Wholesale Prices in Cities, of Five Important Farm Crops and Five Important Animal Products. The Average for 73 Years equals 100 Per Cent. Present Prices are only a little Higher than the 73-Year Average

The comparative prices for 73 years are shown also in the chart on page 112. The average price of each product was considered as 100 per cent. The percentages for each product for each year were then calculated. The average of the percentages for a given year represents the comparative price for that year.

Prices of farm products on New York farms. The average prices of some of the important products on New York farms on December 1 are given in Table 7. Of late years wheat has been lower than the average for 47 years. Other crops are generally higher. The period of low prices resulted in the low yields of the same period.

Reasons for former low prices. During the eighties and the early nineties there was a period of such serious overproduction of farm products that farmers received almost nothing for their work. The Year Book of the Department of Agriculture gave the average farm price of corn in 1896 as $21\frac{1}{2}$ cents per bushel of shelled corn. The average price in Nebraska in that year was 13 cents and in 1897 it was 17 cents.[1] The corn from a farm that the writer helped to operate, in eastern Nebraska, sold in 1896 for 8 cents per bushel of shelled corn, so that the above prices appear to be sufficiently high.

If efficient methods of farming are used, an acre of corn in the Corn Belt can be grown, harvested, and marketed with 20 to 25 hours of man labor and 40 to 50 hours of horse labor. The Year Book reports the average yield of corn in Nebraska in 1896 as 37.5 bushels of shelled corn per acre. At 13 cents a bushel this was worth $4.88. This is the amount of money that the farmer received for two days' work of himself and team, use of an acre of land, use of machinery, use of corncrib, and to pay the corn-shelling bill. This amount of money left the farmer less than no pay for his own labor. He paid for the privilege of working.

The prices of farm products in 1896 were the lowest for the past 73 years. Yet it is that year, 1896, with which present prices are almost invariably compared in order to show how high prices now are. Why not take 1846, 1856, 1866, 1876, 1886? Or, better yet, why not use a long enough period to tell whether we

[1] U. S. Dept. Agr., Year Book, 1898, p. 692.

TABLE 7. AVERAGE VALUES ON NEW YORK FARMS ON DECEMBER 1[1]

Year	Corn (Cents per bushel)	Wheat (Per bushel)	Oats (Cents per bushel)	Barley (Cents per bushel)	Rye (Cents per bushel)	Buck-wheat (Cents per bushel)	Potatoes (Cents per bushel)	Hay (Per ton)
1866 . .	81	$1.86	42	74	84	64	48	$11.25
1867 . .	95	1.89	54	105	107	74	64	12.51
1868 . .	83	1.55	55	132	102	75	57	11.16
1869 . .	82	1.09	44	78	82	68	40	10.03
1870 . .	78	1.27	52	76	87	73	58	15.45
1871 . .	74	1.36	46	70	79	70	43	17.46
1872 . .	62	1.46	39	72	79	74	56	16.47
1873 . .	64	1.47	40	101	79	71	50	16.57
1874 . .	84	1.14	51	106	83	72	51	11.81
1875 . .	65	1.14	38	78	75	58	31	12.21
1876 . .	62	1.20	38	76	75	68	73	10.27
1877 . .	58	1.19	34	68	70	72	41	9.34
1878 . .	50	1.02	29	70	58	50	81	7.40
1879 . .	61	1.40	40	72	75	54	36	9.79
1880 . .	57	1.17	44	83	83	53	42	15.90
1881 . .	77	1.37	48	93	93	82	87	14.55
1882 . .	77	1.10	45	80	76	75	61	12.25
1883 . .	73	1.11	40	75	72	86	39	10.50
1884 . .	60	0.85	35	66	63	56	39	12.50
1885 . .	58	0.96	36	71	67	53	45	12.75
1886 . .	56	0.84	35	61	59	52	41	10.75
1887 . .	57	0.82	37	68	61	53	62	10.76
1888 . .	58	1.10	37	70	63	62	38	11.25
1889 . .	49	0.90	32	56	55	47	47	9.00
1890 . .	65	1.00	50	78	73	58	78	7.75
1891 . .	66	1.00	38	65	88	56	37	11.00
1892 . .	60	0.85	39	75	65	50	65	11.00
1893 . .	55	0.76	30	60	63	60	55	11.33
1894 . .	61	0.62	39	56	54	54	48	9.66
1895 . .	45	0.68	28	81	48	44	23	13.70
1896 . .	38	0.88	26	39	44	37	31	12.04
1897 . .	40	0.90	27	42	48	40	67	8.25
1898 . .	43	0.72	31	48	50	45	42	5.75
1899 . .	45	0.80	33	50	56	59	40	10.45
1900 . .	47	0.77	32	51	56	57	45	14.05
1901 . .	72	0.82	48	56	62	57	71	10.58
1902 . .	67	0.79	36	55	58	59	59	10.53
1903 . .	60	0.81	41	55	61	59	56	10.96
1904 . .	64	1.09	38	57	73	61	54	10.44
1905 . .	61	0.86	37	54	67	59	70	10.38
1906 . .	59	0.82	40	55	65	61	49	12.10
1907 . .	71	0.99	57	80	81	70	57	15.50
1908 . .	80	0.99	56	70	81	76	75	12.25
1909 . .	74	1.11	49	69	80	69	50	14.20
1910 . .	63	0.96	42	70	74	65	48	13.70
1911 . .	77	0.95	51	97	89	73	90	17.90
1912 . .	70	0.99	42	68	76	64	58	14.90
Average for 47 years	64	$1.05	40	71	71	62	53	$11.92

[1] U. S. Dept. Agr., Bureau of Statistics, Bulletins 56–63, and Year Book, 1912.

are on a "hill" of high prices or whether we have just passed through a "valley" of low prices?

The average farm price of corn in the United States for the ten years 1891 to 1900 was 33 cents a bushel. The average value of the crop per acre was $7.99. For the same ten years, the average farm price of wheat was 63 cents and the average value of the crop per acre was $8.44.

As a matter of fact, the last twenty years of the last century were a period the like of which we never had before and can never see again. The great open prairies were then skimmed. Following the Civil War, a large number of persons went into farming — probably too many for the old conditions, vastly too many for the new. New kinds of farm machinery came into general use in the eighties that doubled the farmer's efficiency. For ages, nature had been enriching the lands of the great Central Grass Belt. These lands had little value, so that land rent was almost nothing. They were exceedingly fertile, so that plant-food was free. Free land, free plant-food, too many farmers, new machinery — a combination of conditions that never before existed and can never come again! Those were the days when the Nebraska farmer burned corn because it was cheaper than coal. It is no wonder that our agricultural exports were large. Nor is it any wonder that young men went to cities by the thousands, because farming did not pay.

Present farm prices not high for farm conditions. The city dweller who compares prices with 1896, and perhaps remembers his boyhood days on the farm, thinks that the farmers of to-day must be getting rich. He supposes that every farmer rides in an automobile. Some persons go so far as to blame the farmer's automobile for the high cost of living. As a matter of fact, the percentage of farmers who own automobiles is very small. There are only a few sections where such ownership is common, and even in those sections the landlords are often the ones with the automobiles. Taking the United States as a whole, for every farmer who owns an automobile there are many whose only vehicle of luxury is a spring seat on a lumber wagon.

The census report gives some indication of the wealth of

farmers. Thirty-seven per cent of the farmers in the United States are renters. The average value of implements, machinery, and live-stock on the rented farms in 1910 was $699. Part of this is owned by the landlord. Sixty-two per cent of the farmers own part of the land that they operate. The average value of land, buildings, implements and machinery, and live-stock on these farms was $6754. One third of these farms were mortgaged and one sixth of them included some rented land.

The average farmer is making interest on his capital and farm wages for his labor.[1] The interest is not high enough to attract any large amount of money out of the cities. The wages are not high enough to cause any large number of men to move from city to country, but they are high enough to keep most of the boys on the farm. Probably enough of them are now staying, but the effect of this will not be felt for a few years. Just now (1914), we are feeling the effect of the great exodus of boys during the nineties. Now boys are studying agriculture and are staying on the farms. They are responding to the increased prices by becoming farmers, as their fathers are responding with increased crops.

Probable future prices. We must not expect that the value of farm products on the farm will drop much unless farming is again overdone. The present conditions may result in too many boys staying on the farm and in temporary overproduction. There will also be overproduction of some products every year, as there has always been. For example, thousands of tons of cabbages were never harvested in 1912 because the crop was so overproduced that the price did not pay for hauling. Thousands of bushels of onions were stored in the fall of 1912 and thrown away the following spring because there was no market. The writer saw 2500 bushels rotting in one storage house in Ohio for want of a market. But such conditions soon correct themselves.

The prices in 1913 were generally abnormally high because of the excessive drought in the preceding summer. But any permanent lowering of the prices of products on the farm must not be expected, at least not unless everything else becomes cheaper. Land now has a value, plant-food has a value. Every farmer

[1] U.S. Dept. Agr., Bureau of Plant Industry, Circular 132.

knows how to greatly increase his crops, but each added bushel costs more per bushel. The crop yields will continue to be increased if prices rise. They will be decreased if prices fall. There is much land to be reclaimed, but always at much cost. Land that must be drained or irrigated or fertilized or green-manured is expensive. The bushels grown on it are costly bushels. By heavy fertilization or other intensive methods, we can easily increase crops; but after a fair crop is secured every bushel that we get costs more than the preceding bushel. The limit of yield per acre is far from reached, but the period of low cost of production per bushel is passed.

Europe secures larger yields per acre, but even with the low wages the cost per bushel is more. Europe has to pay the farmer much higher prices for nearly all products in order to secure her large yields.

WAYS OF REDUCING THE COST OF FOOD

Reducing the cost of distribution. We cannot look to the farms for any great reduction in the cost of food. But there appears to be one way in which prices may be lowered to the consumer. From a half to two thirds of the money paid by the consumer never reaches the farmer. Most of this amount is consumed by the exceedingly cumbersome machinery of distribution in cities. Probably half of this excessive increase in price after the cities are reached can be eliminated. But if this is to be done, some persons who are a part of the present system will have to change their occupations. These persons naturally object to any change. The city dweller will also have to learn that when he telephones for a quart of potatoes to be delivered, what he pays the farmer for the potatoes is practically nothing. What he calls the high cost of potatoes is the high cost of delivery and bookkeeping. The first step in reducing the cost of living is to buy more than a quart of potatoes at one time.

Use of cheaper food. As our population is becoming larger we are being forced to use cheaper kinds of food. Beef is one of the most expensive foods, because so much feed is required in order

to produce a pound of it. It has been estimated that a given amount of grain will support five times as many persons as will the meat grown from it. As population increases, the price of grain rises faster than does the price of meat. During the last ten years, corn has risen in price much faster than have steers. This is the reason why farmers are not raising more beef. The childish suggestion that each farmer should raise two steers a year would result in a very much higher cost of living, if farmers were foolish enough to follow the advice. This advice ignores the fact that we cannot eat the grain and also produce beef from it. Laws are often introduced in Congress and in state legislatures to prohibit the killing of heifer calves, in the apparent assumption that calves live on air. The food in the milk that it takes to produce a given amount of veal will support more persons than will the veal. The longer the calf is fed on milk, the less is the supply of human food. The comparative prices offered for the milk and for the veal produced from it are measures of the comparative need of the city for these products. Hence, calves are not kept long except where milk is cheap. Few cattle are raised except where feed is cheap.

A given amount of feed will produce much more human food in milk than it will in beef. Dairy cows are therefore increasing about as rapidly as population. We keep a little more than one cow for five persons. In addition to milk, this number of cows provides about one veal or one old cow or bull for beef for each family each year.

Hogs are much more efficient users of food than are steers. A given amount of grain will produce many more pounds of pork than it will of beef. For this reason, hogs are increasing in number while beef cattle are decreasing.

Poultry are very efficient users of food. As meat rises in price, more eggs are used. The egg receipts in the seven leading egg markets, New York, Chicago, Boston, St. Louis, Cincinnati, San Francisco, and Milwaukee, were as follows :[1]

1891	5,040,888 cases
1901	8,655,001 cases
1911	14,275,271 cases

[1] U.S. Dept. Agr., Year Book, 1912, p. 688.

From 1890 to 1910 the population of these seven cities, including all the territory now in New York City, increased 78 per cent. The receipts of eggs increased 183 per cent. We are substituting eggs for beef.

When population becomes very dense, roughage and waste products will be used for producing milk. After we have kept all the dairy cows that are needed, we will raise as many beef cattle as can be kept on the remaining supply of roughage and pasture. We are feeding animals less and less on grain that is good for human food. The decreasing number of beef cattle and the tendency to market steers at a younger age are an expression of this condition.

All these changes mean that some persons who once ate meat must now eat less of it. Unfortunately the manual laborers, who are the very ones most in need of meat, are the first to have to go without. We are getting the first intimation of the conditions that have long existed in all densely populated countries. Probably we can support the vast hordes of people that are estimated as our possible future population, but they will not live so well as we live.

Location of factories in villages and small cities. Comparatively few persons go from city to country. Such a movement is neither necessary nor desirable. It is very difficult for grown persons who have never lived on a farm to become farmers. The best time to learn to farm is in one's youth. But large numbers of persons who are employed in towns and cities now live where they can have land enough to raise part of their food. By locating industries in smaller places and by the increase of trolley lines it is made possible for many workers to live on small plots of ground that will provide for a garden and hens, and sometimes for a cow. This enables the family to greatly reduce the cost of living. At the same time it provides the best kind of work for the children. The number of farms of less than 20 acres increased 25 per cent in the last ten years. A very large proportion of these places are occupied by persons who are employed at some industry other than farming. In a single county without any large cities — Tompkins County, New York — there are about 500 such places.[1]

[1] Cornell University Agr. Exp. Sta., Bulletin 295, p. 562.

Small or large farms. One of the popular suggestions for reducing the cost of food is to reduce the size of farms. But, for general farming, our farms are now too small. Machinery makes it possible for a family to work more land than formerly. The farm that uses two or three workers is a family farm. It will employ a farmer and his sons. Four horses are required for farming with modern machinery, but four horses can raise 80 to 100 acres of general farm crops. Pasture land, woodland, roads, and farmstead make up half the farm in most sections, hence 160 to 200 acres is usually required for efficiency in general farming. In the general farming sections from New York to Nebraska, farms are rapidly changing to the four- to six-horse size. The city, as well as the country, is best off when farms are of an efficient size. With small general farms it is necessary to keep four horses in order to use labor-saving machinery, even if the area is too small to keep the horses busy. There is no benefit to the city dweller in having small farms if the farm horses eat the product. The moderate-sized general farms contribute more per acre to the city food supply than do the small general farms.[1]

Truck and fruit farms may be somewhat smaller, but only a few such farms are required in order to supply our needs. The vast majority of farms must raise hay, grain, potatoes, live-stock, and milk.

Those who would keep the boys on the farm defeat their purpose when they would reduce the size of farms. The four-horse size mentioned above is a two-man farm. If farms are too small to provide profitable work for the sons, they very wisely leave.

In Jefferson County, New York, it was found that 79 per cent of the boys had left small farms and only 16 per cent had left the good-sized farms (Table 8).

China furnishes an example of a country with small farms. It is estimated that about 75 per cent of the population are farmers. With the little patches, and the hand labor of men, women, and children, each family can produce only a trifle more than it eats. Since there is so little surplus, only a small city population can be supported.

[1] Cornell University Agr. Exp. Sta., Bulletin 295, p. 527.

TABLE 8. RELATION OF SIZE OF FARM TO BOYS LEAVING THE FARM, 674 FARMS, JEFFERSON COUNTY, NEW YORK

Acres Farmed	Number of Families	Percentage of Sons		
		At home	On other farms	Not farmers
30 or less	25	21	33	46
31 to 50	29	52	22	26
51 to 100	171	75	8	17
101 to 150	187	78	10	12
151 to 200	136	72	10	18
Over 200	126	84	8	8

If our population ever becomes as congested as is that in parts of Europe or Asia, we may want smaller farms and may do away with machinery and horses and use men and women to till the land. The reason why we use machinery and horses is because labor is high. Some of the old countries have tried machinery and discarded it, not because of ignorance of the workers but because human labor is cheaper. In most parts of India it is cheaper to cut grain with a sickle than with a binder. How cheaply these people work is a measure of their poverty.

None of these discussions should be construed to favor large "bonanza farms," or large holdings by landlords. Near large cities in the East, many large tracts of land have been purchased in recent years for country homes and as places where wealthy men play at farming. The influence on the agriculture of such regions has been demoralizing. In some parts of the country, particularly in the Middle West, there is a tendency for some persons to buy farms to be run by tenants. The tendency for one individual to acquire a large number of farms for such a purpose is a serious menace. In the opinion of the writer it would be well to have laws that would place some limitation on the size of such holdings.

Restriction of immigration. Another popular suggestion for decreasing the cost of food is to increase the number of farmers by persuading persons to go from the city to the farms or by the importation of cheap labor for the farms. These suggestions would bring about exactly the opposite condition from the one that is

desired. If we continue indefinitely to allow practically unrestricted immigration, we shall in time reach the cheap-labor conditions of the Old World. Their yields per acre are attractive, but are secured at what cost! Women and children must work in the fields in order to live. The returns per acre are high, but per worker they are low. It is estimated that the American farmer produces twice as much per worker as does the Belgian peasant and five times as much as does the Chinese peasant. The city dweller must not deceive himself by thinking that he can keep up wages in the city and pay poor wages to the farmer. The European system secures larger yields, but the farmers receive more for nearly all farm products. Their cost of production per bushel is higher in spite of the cheap labor and the high yields.

Perhaps the worst suggestion made for increasing farm production is that we bring in cheap labor of other races to help the farmer. The worst calamity that can ever come to a rural region is to have it settled by two races that will not intermarry after a generation or two.

One of the most serious problems in the country is to maintain schools, churches, and other social institutions. The chief school problem is distance. There are not enough children within convenient distance of a schoolhouse, nor is there usually enough wealth to maintain a good school. If two school systems are to be maintained, they will be poor indeed. The money that is inadequate to maintain one good school system must be divided between two schools, one for each race.

Persons who have never lived in such a community may question the need for two schools. The rural school is the chief social meeting-place of boys and girls of the farm. To a large extent the noon hour and the recess take the place of the evening parties in town. In the United States, whenever any large number of each of two non-intermarrying races have settled in a community, two school systems have resulted. In parts of South America, less racial distinctions have been made and the different races have intermarried.

The physical fact of the scattered population is the chief reason for the poor rural schools of the South and for the high

percentage of illiteracy among southern whites. If the Negroes in any prosperous county were replaced by white families, the schools would doubtless be as good as in the North, because there would be enough persons within reach of the school to maintain a good school. Transportation of pupils may be suggested, but the problem remains the same. If every other house is occupied by a Negro, whatever the school system, there will be only half as many white families in a given area.

The same point applies to churches, granges, social gatherings, coöperative effort, and all things that have to do with the progress of civilization. The greatest obstacle to all such progress in rural regions is distance. Dividing the population into two non-intermarrying classes doubles the problem by doubling the distance.

It is well known in the South that whenever a rural community becomes all white, the land values double and treble. This is primarily because there are then enough persons in a rural community to maintain good schools, churches, and other institutions of civilization. The twofold and threefold increase in land values is a measure of the increased desirability as a home. California furnishes a similar example. When a few Japanese buy land in a community, the land values drop. There are then not enough Americans to maintain the American social institutions that must be kept up if life in the country is to be worth living. Probably a settlement of Americans in a farming community in Japan would have an equally bad effect. The Japanese laws indicate that this is the opinion of the Japanese government.

A high development of the rural community requires a homogeneous population. In the city there may be enough people of each race so that each may maintain its own institutions and its own social relations; but in the country there are too few, even when all are one. The farm community must be enough of a unit so that all will work together socially if the highest development is to be secured.

The primary reasons that lead families to leave the farms and go to town usually are to get the benefit of better schools, churches, and other social institutions and to have better medical attention. Whenever a large part of the population is made up of

an alien race, the reasons for such a movement are many times increased. The menace to health of a less educated race is also a powerful factor in preventing progress in a mixed community.[1]

The price of products in the United States is based on American wages and the American standard of living. If one farmer can get cheap labor so that he can sell on the American wage market but produce on a low wage cost, he may do well for a time; but when others also get the cheap labor, he is worse off than before.

The men who do the manual labor inherit the land. This has been true even of the Negro. Much of the richest land of the South is in the hands of the Negroes. They do not yet own much of the land; but what difference does it make, whether they own or rent, if they are the persons who make up the rural community? Omitting Oklahoma, there are 222 counties in the South where the number of black farmers exceeds the number of white farmers. In 15 of these counties less than 1 in 10 of the farmers are white. In 53 of the counties there are more Negroes than whites who own their farms. In all these 222 counties the hired labor is nearly all black. As a result of these conditions the white population is very scattered. The better the land, the more likely are the white persons to move to town. If the land is good enough, it can be farmed by Negro tenants and the owner thus allowed to live in a town or a village. It takes good land to stand this treatment. The poorest land has required the intelligence of a white operator in order to make it yield a living. The black prairie soils of Alabama and Mississippi are striking examples. These are very fertile limestone soils. They readily grow alfalfa, corn, oats, wheat, cotton, and many other crops. In all this region there is a tendency for the white population to move to the towns and villages, where schools are available. The white and the black population of Montgomery, Alabama, are almost equal, but in Montgomery County outside the city there are nearly 6 blacks to 1 white. A large proportion of these few white persons live in small villages, so that the proportion on farms is still less. In

[1] Dr. Charles T. Nesbitt, "The Health Menace of Alien Races," *World's Work*, November, 1913, p. 74.

Selma there are nearly as many whites as blacks, but in Dallas County outside of this city there are almost 9 black persons for 1 white. A large proportion of these few white families live in small villages, so that the proportion on the farms is still less.

The results on production have been just as bad. These rich soils, which should be producing as Iowa soils do, do not produce their own mules or all the feed for them. Little but cotton is grown, and the yields of this are very poor for the soil. There are few regions where poorer use is being made of the natural advantages.

These facts are given as an illustration of the general economic laws that govern changes in farm population and farm ownership. When persons who can underlive the present farmers settle in a farm community, they tend to displace the present farmers, partly because they live for less and partly because, living for less, they make the community undesirable as a home. At the same time the agriculture is made poorer rather than better. The same principles have frequently been illustrated in the northern states, but the statistics are not so readily available. When we settle any persons in a rural community as workers we should consider, not whether they will pay us a profit as laborers, but whether they will make the kind of persons that we desire for our future farmers.

Some persons are now advising that the lowest class of our immigrants be turned to the farms. These immigrants have an entirely different experience and a different standard of living from any who have yet settled on northern farms. It is certain that any considerable settlement of such persons in any rural community would drive out the present farmers. It is certain also that a poorer agriculture would be established. Of late years it has been a popular thing for public speakers and writers with very limited knowledge of the facts to berate the American farmer. Unfortunately some persons who have occupied important positions have contributed to the confusion, until many of the thinking persons in cities have been convinced that our farmers are inferior to those in any other country of the world. The misleading and often untrue statements of the wonderful things done in

Europe are largely responsible for this unfortunate condition. One of the popular errors is to compare the potato crop of New York with that of Europe in order to show how little our farmers know about farming. It would be just as accurate to compare the apple crop of Europe with that of New York in order to show what superior farmers we have in New York. Or we might compare the corn yields of Champaign County, Illinois, with those of Europe, in order to show our superiority. Our wheat yields are compared with those of England as a means of showing how poorly we farm, but most of our wheat is grown with much less rain and with a less favorable climate. Our farmers also pay better wages and get less for their wheat. Such unscientific and misleading comparisons have done much harm.

As our farms are the foundation of our wealth, so the farmers are the foundation of our civilization. No high civilization can long endure that is not based on a high type of citizenship on the farms. No temporary inflation of production can compensate for bringing in a lower class of farmers.

A large proportion of our farm boys are now staying on the farms. The great movement to cities has been checked. We do not need to look to any other country for more farmers or farm laborers. Throughout the North our farms have always been "family farms." The farmer and his family do nearly all the work. Less than half of the farmers (46 per cent) hire any labor. Most of the hired men are the sons of neighboring farmers. Some individuals always clamor for cheap labor, but such labor is not needed. If it were supplied in large amount the family-farm system would be destroyed. This system results in the best citizenship and in the best agriculture. How much more efficient it is than hired labor can be testified to by business men who have tried to run large farms. Such farms often get large yields and are often referred to as examples of what can be done, but with very rare exceptions they furnish examples of how to lose money.

If any considerable amount of low-class labor settles on our farms it will result, as it always has resulted, in driving out the better farmers, and will at the same time result in a poorer agriculture. The aim of public-spirited persons and of government

endeavor should be to make the farm a more attractive place, so that it will hold intelligent and forceful men, not as landlords, but as workers. We should raise the rural community to the standard of the American boy and girl, rather than look around the world for someone who is willing to accept life on a farm regardless of its standards.

Restriction of exportation of phosphorus. The four important plant-foods that are needed in increasing quantities are nitrogen, phosphorus, potassium, and calcium. We have an inexhaustible supply of calcium in our limestone and of nitrogen in the air. Both of these can be supplied to our soils to the extent that prices of crops warrant. Fortunately most of the American soils in the northern states seem to have a fair amount of potassium. There is enough of this in the mines of Germany to last for an indefinite time. But the supply of phosphorus in American soils is often deficient. This is the chief constituent in most of the chemical fertilizers. The chief source of phosphorus is from the phosphate rock of the Carolinas, Tennessee, and some other southern states. The amount of this rock seems to be limited.

According to Dr. C. G. Hopkins of the University of Illinois we are now exporting each year as much phosphorus in this rock as would be contained in twice the entire wheat crop of the United States. Germany controls the exports from her potash mines, which appear to be inexhaustible. We give no attention to the exportation of the phosphorus that we are likely to need on our own farms. An investigation of the phosphorus supply and our probable future needs should be made, and the question of limitation of export should be given careful attention, before it is too late.

SUMMARY

The wholesale prices of farm products are not very high when compared with the average for the past 73 years. The prices that farmers receive for animal products are higher than the average, but the prices received for crops are generally as low as, or lower than, the 73-year average. For a generation after the opening of the Western prairies, prices were extremely low. In comparison

with this period prices are high, but, when comparing with a long period of time, the prices that farmers receive are not very high.

Crop yields east of the Mississippi River have been rapidly increasing in the last ten to fifteen years. Before that time there was a period of low yields, because of low prices.

Farmers know how to raise much larger crops, and do raise larger crops whenever they are convinced that prices will be high enough to make it pay to do so.

In nearly every county in the United States there is considerable land that can be brought into use by clearing, drainage, irrigation, or other means. This land will allow for a considerable increase in production.

But there is very little that can be done to increase production without increased cost. Land that must be cleared, drained, irrigated, green-manured, or heavily fertilized is expensive land. The bushels grown on it are expensive bushels. After a fair yield has been secured, every bushel that we get usually costs more than the preceding bushel. Farmers quickly adjust their yields to prices. If present prices continue, production will be increased. If prices rise, production will be considerably increased.

There does not seem to be any likelihood that prices paid to farmers can be permanently lowered, but there are ways of decreasing the cost of food to the consumer.

The machinery of distribution after products leave the farm is unnecessarily expensive. Much of this cost can be eliminated.

Of necessity we are using more foods that come from plants and less animal foods.

By locating factories in villages where the workers can have gardens, the cost of living may be reduced.

The popular suggestions to reduce the size of farms and to import cheap labor to help farm are more likely to result in expensive, rather than cheap, food. Small farms that follow the same type of farming usually have less left to sell than do moderate-sized farms, because so much is consumed by the horses and the men who work the land.

A restriction of immigration by raising the standard for admission is strongly advised as one of the best means of preventing

the cost of living from rising very much higher, and as a means of checking the present tendency to lower the standard of living.

In consideration of the striking need for phosphorus over large areas of the United States, an investigation of the phosphorus supply with a view to restriction of export is recommended.

SOME SUGGESTIONS FOR CITY PERSONS WHO DESIRE TO FARM

By Professor G. F. Warren, Cornell University

(From Circular No. 24, College of Agriculture, Cornell University)

THIS circular is prepared to make a few suggestions to the considerable number of inexperienced persons who are making farm investments. For a number of years large numbers of such persons have been writing to the College of Agriculture for advice. It is not often possible, in the limits of a letter, to fully answer the questions asked, nor will it be possible in a circular, but a few of the more common questions and mistakes may be discussed. The writer is well aware that the facts and opinions here presented are not popular, but he believes that if carefully considered they may save many misfortunes that are sometimes tragedies. It is not the purpose of this circular to persuade anyone to farm or not to farm. The aim is to give a better understanding of what may be expected from a farm, and to suggest the safer ways of procedure for those who are starting farming. The facts here presented are based on records of large numbers of farms.

Profits to be expected in farming. Farming is a very conservative business and, like all conservative enterprises, it gives conservative returns. Compared with large city enterprises, farming is a very small business and, like other small enterprises, too much should not be expected from it. It is a very complicated business and requires considerable experience for success. For one who knows how to farm, it offers a wholesome living and a modest profit.

In the best townships in Jefferson County, in a year fully as good as the average, the average farmer and his family with a capital of $9006 made $1155 above the business expenses of the

farm. In addition they had the use of a house and some farm products. The houses are nearly all heated by stoves, with wood that comes from the farm. Usually not more than one stove is kept burning besides the one in the kitchen. Probably less than one in a hundred of the farmhouses has a bathroom. The majority of the houses are such as would rent for $10 to $20 a month in a village. In this county the farms usually furnish potatoes and milk and some vegetables, eggs, and meat for family use. The $1155 represents the amount that the average family had for living, aside from what the farm furnished, and for saving. This should not be compared with city wages because the farmer has capital invested. At 5 per cent the use of the capital is worth $450, and unpaid farm work done by members of the family was valued at $96, so that the pay for the farmer's work, or his labor income, was $609, besides the use of a house and some farm products. This is considerably above the average for the state, but is exceeded in some townships in the state. In 16 townships in three counties of 1988 farmers 63 made labor incomes of over $2000; that is, made 5 per cent interest on the capital and had over $2000 besides the use of a house and some farm products as pay for the year's labor. Farming does not often give what in the city are considered large profits, nor is there so great danger of large losses. Bulletins 295 and 349 of this station give some of the variations in profits made by different farmers.

A common wage in New York for experienced hired men is $30 a month, with house, land for a garden, firewood, and a quart or two of milk a day. In some of the more prosperous parts of the state, $35 is often paid. Very rarely does a hired man get more than $40 by the year. Unmarried men are paid about $5 a month less than married men, but are given their board. Inexperienced men are, of course, worth much less. The above figures may give some idea of the profits in farming.

The glowing stories about farming that are told in many publications have led to very wrong conclusions as to the profits to be expected. A recent article that is typical stated that the farmer made $2400 a year from one enterprise and that he made 120 per cent on the capital. But no allowance was made for labor

of men, horses, or machinery. Depreciation, taxes, and insurance on buildings were omitted, to say nothing of the multitude of miscellaneous expenses.

To call the difference between the value of the feed and the returns from live-stock profit, is just as inaccurate as it would be to call the difference between the cost of leather and the value of shoes the profit of a shoe factory. This error is very common in farm publications.

Popular publications are of course looking for striking things. Headlines stating that John Jones and his son rose at five o'clock, milked the cows, worked in the fields all day, and milked the cows again at night, and made a dollar and a half apiece by so doing, would probably not add to the circulation any more than would the statement that merchant So-and-so went to the store in the morning, stayed there all day except for a hurried lunch, returned home for supper, and that by so doing he made enough to pay his modest living expenses. Publications are usually not looking for the ordinary, they are looking for the unusual; that is, for the news — and the news is sometimes highly colored.

Compared with city work, farming is a very much better business than many farmers think it to be. It is a much poorer business than many city persons think it to be. At one of the Farmers' Week lectures, the writer gave the results from some of the most successful farms in the state. After the talk, an intelligent farmer stated that he did not believe any farm ever made so much money. An equally intelligent city business man criticized the talk even more severely because it did not show profits enough.

How big a business is a farm? The following statement from a recent letter is typical:

> I want to buy a farm and go to farming scientifically. I have always had a love for outdoor life and find that my present occupation is too confining for my health. I have about $5000 and have thought that you might possibly know of some good graduate of the College of Agriculture who would act as superintendent for me for a share of the profits. We would prefer a married man so that he could board the help.

Very few farmers who have only $5000 invested in the business employ much, if any, hired labor. In fact, a farm with this

amount of capital is usually a one-man farm. The graduate of a college who would act as superintendent of this farm should be able to do all the work himself, if not interfered with too much by the owner. There would usually be nothing left for the owner to do and no other hired help to board.

A farmer running such a farm would ordinarily make a labor income of about $350. A person who is not so vitally interested would not be likely to run the farm so well. It takes more ability to run such a place and make any profit than it does to run a larger enterprise successfully. A graduate of a college of agriculture who has the experience and the ability that are necessary to make a profit on such a farm is a man who can earn $800 to $1200 a year in any one of several different kinds of work. In short, this represents too small a business to make it pay to hire a graduate.

A few farmers who use this amount of capital are doing well, but they are the exception. A considerable number who know how to farm are doing well when the owned capital is not more than $5000 and when nearly as much more is borrowed. It is not safe for any but experienced farmers to be so heavily in debt. Another way of obtaining more capital is to be a renter. Many renters with less than $5000 of their own are doing well.

Judging by the profits that farmers make, 5 per cent of the capital would be very high pay for a manager. It will be seen at once that no small business would justify one in employing a graduate of an agricultural college as a manager. Usually it requires a wise investment of $20,000 to $40,000 in order to justify one in employing a really good graduate of a college of agriculture who has had good farm experience and good business experience.

A general or dairy farm with this amount of capital will usually employ three to six men. A good manager of such a farm does not conduct his business from an office; he should be at work with the men and should do as much farm work as any other man on the place. No industry can afford a non-working foreman for so few workers.

In 16 townships in 3 counties, the 23 most profitable farms selling market milk at wholesale had an average capital of

$19,728. Their average area was 257 acres, of which 154 acres were in harvested crops. These farms kept an average of 32 cows, besides young stock. These large profitable farms employed an average of 3.2 men, or a little over two men besides the farmer. With this amount of help, the stock was cared for and, in addition, enough cash crops were raised so that over one third of the income came from the sale of crops. The crops sold for enough to pay the entire feed bill and have left an average of $1553 per farm. For a business of this size, inexperienced persons often employ two or three times as many men.

Farming a slow business. The returns from money invested in farming are very slow compared with most enterprises. Farming is a family business. The returns from some investments do not even come in the farmer's lifetime; they are made for his sons.

Farming is not a factory process. It depends on living things. Many of these things cannot be hurried. If one starts to improve his soil, he will not get far until he has carried out one full rotation. This usually takes six years on the dairy or live-stock farms. At least a second rotation must be carried out before the full returns come in. The successful live-stock breeder takes time. The favorite cow may persist in raising bull calves, so that the herd is not soon replaced by her daughters. An investment in tile drains is a good thing for many farms, but we do not expect the drains to be paid for at once.

The man who plants an apple orchard has a long-time investment. Orchard surveys of four counties published by this station indicate that the average apple orchard does not yield much until it is over twenty years old. The maximum production is reached at forty to fifty years of age. There are varieties that bear younger, but they also die younger. The old standards, such as the Baldwin, are long-lived trees that have a long youth as well as a long life.

So it is with nearly all the best farm investments. Returns come slowly. Many an amateur at farming starts out with too rosy views and becomes discouraged at the expense and time before things have had a chance to pay.

Cost of living on farms. Approximately half of the food of farm families is furnished by the farm at a cost much below

what it costs in cities. The purchased food usually costs as much as, or more than, it does in cities. City water rent is very much cheaper than the cost of furnishing running water in the house on most farms. Light is cheaper in cities unless the farmer uses kerosene lamps, as they nearly all do. High-school education is often very expensive for farm children, because it is often necessary for the children to leave home and pay board, or a horse may have to be kept for the children to drive to school and this is very expensive even on a farm. The fact that food and house are cheaper on the farm makes the farm most attractive for persons with large families and small means, because such persons spend most of their money for food. The children can also be of much help in the farm work. At the same time the children not only receive the benefits that come from wholesome labor, but also learn much about plants and animals. Persons who have an income so large that food is not the chief item in the cost of living are likely to be disappointed in their expectations of a greatly reduced cost of living on farms.

A farm a home enterprise. Farming is very different from most city occupations. The success of a farm is dependent on the entire family. All the members of the farm family take some part in the farm business. The women usually help by taking care of the hens and in some of the other farm work. They go to town to get farm supplies, often board some of the hired help, and usually take a considerable part in other farm operations at times of unusual pressure of farm work. They often direct the farm work during the absence of the head of the family. Children on farms practically always help with the work. There are many things that a small boy can do as well as a man. It is not of vital importance to the family whether one is a carpenter or a mason, but when one decides to be a farmer the family must be consulted, because farming is a family occupation.

One of the primary advantages of a farm is its value as a place to bring up children. The farm provides a healthful and wholesome life. Children on a farm learn to take life and work seriously. They have the best form of apprenticeship by working with their parents. The reason why farm boys get along so well

in cities is primarily that they have learned to take an interest in their work and have learned to stick to it even if they had rather not. Children who have grown up in idleness in a city do not often take kindly to the discipline of farm life. The family that can derive much of its pleasure from the labor on the farm has one of the most important qualifications for success in farming. The primary ways of overcoming the isolation of farm life are to derive pleasure from work and to be able to entertain oneself by reading.

The many other advantages of farm life are fully discussed in the magazines. The purpose of this circular is not to discuss the advantages or disadvantages of being a farmer but to give some cautions to those who are going to start farming.

First learn the business. There are several reasons why one may wish to buy a farm. One may desire to live on a farm while he continues his employment in the city. One may want a farm as a country home. Or one may desire a farm as a place on which to make a living — that is, a real farm.

If the farm is to be a home only, it is of course desirable to know something about farming, but it is not necessary, because the living is made in some other business. The farm is not expected to furnish the income; but if the aim is to make farming a business, then one should learn the business before he invests money in it. The farm boy who goes to town starts in at the bottom and serves some time in subordinate positions before he enters business for himself. If a successful farmer should decide that he desired to go into the grocery business, he should begin in a subordinate position in order to learn the business. It would be very unwise for him to start by buying a store before he had had any experience. It is even more unwise for one who has never farmed to buy a farm before he knows anything about the business. The way to gain the necessary experience is to work for a farmer as a hired man. The failure to appreciate the necessity of an apprenticeship before starting farming is the reason why a circular such as this is needed. If prospective farmers were willing to learn something about the business before starting, they would not make the many errors that call for this advice. The

almost universal error of the city man is overconfidence in his ability, and lack of appreciation of generations of farm experience.

Selecting a farm. If an amateur hopes to make money by farming, he should go where the present farmers are prosperous. The cheap farms are a great attraction to many. But the inexperienced person is the last one who should buy a poor soil. His lack of knowledge will be handicap enough without the addition of poor soil. When land sells for little, it is because in the experience of the farmers of the region there is little or no profit in farming it. The newcomer who laughs at the present farmers in a poor region and thinks that they could do well if they would only follow his advice is an "easy mark" for the land agent. One may be sure that if the land is good, someone in the country will have discovered it. Even in the poorest community, some farmers have plenty of ability. An absolute proof of this ability is the facility with which they can sell a poor farm to an overconfident prospector for several times its value. By all means, the prospective farmer should locate on a good farm in a prosperous community. His chances of success will be much greater, and if he fails as a farmer the capital in the farm can be recovered because such a farm is salable.

It requires the intelligence and skill of the most experienced farmer to make a profit from poor soil. It is just such soil that is ordinarily sold to city persons and to persons from a distance. Good land sells readily to the neighboring farmers. It does not require advertising in order to make it sell. The poor land of the South is often sold to Northerners. The good land is readily salable to persons who know it. The poor land in New York is often sold to men from the West and to men from the cities. The good land does not have to hunt for a buyer.

Land values for many miles from New York are based primarily on the home value rather than the value for farming. The movement for country homes has made much of the land double in price. Such land is sometimes a good speculation, as it may rise in price. It is often very desirable for those who wish a country home and who expect to continue in the city occupation. But if one wishes to make a living from the soil, it is much safer

to go where the farmers who depend entirely on the farm are making good profits.

The farm should have buildings that are sufficient for the purchaser's needs. Good land with buildings can be purchased for little more than new buildings would cost. But the buildings without good soil are useless. The prosperity of the farm depends on the soil. No matter how good the buildings are or how attractive the view is, if the soil is not good the place is certain to prove a disappointment financially. One should not be misled by what can be done on the soil. A given amount of outdoors can be made a good soil if one has the money to spend, but to make it pay is a different problem. A good soil is one that nature made good.

Large crops do not necessarily pay. The beginner nearly always overestimates the importance of large returns per acre. Economy of land is usually much less important than economy of labor and other costs. From cost accounts on a number of New York farms, the following costs per acre were shown:

	Potatoes	Oats	Hay
Rent of land	$4.42	$4.09	$3.78
Cost of man, horse, and equipment labor	42.19	11.15	4.49
Other costs	22.00	6.28	3.44
Total cost	$68.61	$21.52	$11.71

The use of land is about one sixteenth of the cost of growing a potato crop. It is less than a fifth of the cost of the oat crop and a third of the cost of a hay crop. By experience, the practical farmer has learned where to economize. He may not be able to express his views in terms of efficiency engineering, but a very large number of farmers have arrived at the correct practice. The writer is never favorably impressed by the amateur's large yields per acre unless he knows the cost. The way to make money on potatoes is to have the cost per bushel less than potatoes sell for. Fairly good crops are likely to be a help in reducing the cost of production, but phenomenal crops are likely to cost too much. The amateur is likely to figure how many cows he can keep on

an acre by using the soiling system. The experienced farmer is not so much concerned with the cow population as he is with saving the labor cost. Economy in the use of labor of men and horses, and a reduction of the machinery cost, are more important by far than is economy in the use of land. When we arrive at the conditions of high-priced land and cheap labor of Europe, we will give relatively more attention to the saving of areas.

There are some profitable farms that obtain very large receipts per acre; these are usually with types of farming in which the expenditure per acre is also large.

Correct types of farming. One who has traveled much is likely to be impressed by what is done in some other state and may want to try it in New York. He sees hogs eating corn in Iowa, and is likely to think that the New York farmer should raise as many as does the Iowa farmer. He buys an expensive steak, and concludes that beef would pay every New York farmer. Nearly all the pasture land in New York is already in use producing milk or raising dairy cattle. New York farmers have tried practically everything. The types of farming that have survived are the ones that have stood the test.

Overinvestment in buildings and machinery. In Livingston County, the investment in houses represents 14 per cent of the total capital in the farm business, including real estate equipment, live stock, and supplies. Certainly, one should hesitate to build a new home that represents much over a fifth of the capital. The house may be said to be a personal matter; but if the investment goes much beyond this, it is too valuable a house for the farm.

The average cost of barns per cow or equivalent in other animals was $70 in Livingston County. One who spends over $100 per cow should be sure that he is right. The interest, repairs, taxes, insurance, and other costs on such a building amount to about 8 to 10 per cent. The above limit would make an annual cost of $10 per cow for barn rent. One set of barns were built not long ago which were intended to be model barns for the neighbors. They cost $65,000 and were to house 65 cows. The barn rent per cow would be $100 a year. It takes a good cow to give $100 worth of milk at wholesale prices. There are many

such examples in this state. Nearly all the so-called model barns are so expensive as to be impossible on a business farm. Hen houses ought not to cost much over $1 per hen. At this cost, the hen must lay a half dozen eggs to pay her house rent. Many of the big poultry farms have such expensive buildings that the plant cannot possibly pay.

The danger of overinvestment in machinery is even greater, for there are skilled agents whose business it is to make sales. The average farm in Livingston County has an investment in machinery of $6 per acre of crops. Many a farm of an amateur has ten times this amount. The machinery on a general farm ought not to cost over $10 per acre of crops. The complete cost of maintenance, housing, interest, repairs, and depreciation on farm machinery amounts to about 25 per cent of the inventory value. A $10 investment per acre of crops represents a cost of about $2.50 per acre per year.

Raise crops first. The temptation of the beginner is to spend his first year or two in a complete revision of all buildings on the farm. Such changes nearly always cost twice the estimated amount. Unless one has a large amount of money, he is likely to find that when he gets his buildings ready he has no money left for farming. This mistake is a very natural one to make, because in cities, buildings in themselves are often a business. But on a farm the foundation of the business is the crops grown. The way to begin farming is to raise crops. If one cannot make a profit at this, he has no need for buildings. It is better to put off the desire for changes for a few years. One will then know better what he wants. He will also know whether he desires to remain on the farm. Money invested in buildings is rarely returned when one sells.

Learn from the neighbors. The beginner should follow the practice of the best farmers of the region, for the first few years at least. In every community there are farmers who understand farming as well as the most successful railroad president understands railroads. The newcomer with his theories nearly always scorns the experience of the generations of farmers. He fails to realize how old a science agriculture is. The words of

Dr. A. D. Hall, formerly Director of the Rothamsted Experiment Station, show the modest point of view to which he arrived as a result of his many years of scientific investigation.

> . . . Agriculture is the oldest and most widespread art the world has known, the application of scientific method to it is very much an affair of the day before yesterday. Nor can we see our way to any radical acceleration of the turnover of agricultural operations that shall be economical; the seasons and the vital processes of the living organism are stubborn facts, unshapable as yet by man with all his novel powers.

The newcomer fails to realize that in every prosperous farming community there are farmers with minds as keen as any industry can command. Manufacturing enterprises are so much under control that the city man comes to have great faith that by the aid of science and business he can do what he wills. The farmer who has spent a lifetime trying to control the stubborn forces of nature is less confident of the powers of man and science. He has never seen two seasons exactly alike. His plans are every day subject to revision by the weather. He may be excused if his plans are not always clear-cut.

Many public-spirited men of wealth desire to establish farms where, with the aid of college graduates as managers, they can show farmers the results of the application of scientific and business principles to farming. There are already examples in every county of farms that are demonstrating how best to farm under the circumstances. Furthermore, a demonstration of how to farm with unlimited capital is of little value to the tenant or the small owner whose chief problem is not to know what it would pay to do, but to know what to do with his limited means. The college graduate who wants to demonstrate how to farm can best do it by starting as other farmers start and making his money while he farms.

The newcomer should at first humbly follow the example of the best farmers. Any attempt to be a model for the farmers nearly always results in amusement for them at the expense of the newcomer. After one has learned how to farm in the region, he may cautiously try new things if he has not by this time learned that they have already been tried and found unprofitable.

Starting as a young man without capital. A young man can take up any kind of business that he likes, and if he first prepares for the business and then works hard at it he may hope for success. The way to prepare for farming is by working as a hired man on a farm. Visiting on farms does not prepare one for farming any more than visiting in town prepares one to be a banker. There is no way to learn to farm except by farming. It is an excellent thing for city boys to work as farm laborers during the summer vacation while they are in high school.

It pays a young man to make a thorough preparation for any business before he goes into it. Such a preparation for farming includes work at an agricultural college as well as work as a farm hand. Neither one can take the place of the other. The work on a farm should precede the college work. It is a serious mistake for one who plans to farm to take a college course in agriculture before he has worked on a farm. There are many reasons why the farm work should come first. Not until one has worked on a farm does he know whether or not he wants to be a farmer. Many young men are quickly cured of any such desire as soon as they find out what farming means. The sooner such men find this out the better. Others like farming better than they expected to. It is a great mistake for parents, or anyone else, to try to make farmers out of young men who are not going to like farming. When a young man is deciding what his life work is to be, he does not need blinders.

A person who has never worked on a farm is not prepared to take a college course in agriculture. He will gain vastly more from such a course after he has had farm experience. The young man from the city should spend at least one full year on a farm before he takes such a course. Two years would be very much better.

Farmers usually hire men after they have seen them. They do not ordinarily hire by correspondence. If one does not know where to get work, he should go to a farming community and start out in the country to look for work. He will usually get a temporary place if he looks as if he would not be afraid of work. At first an inexperienced city boy is rarely worth his board. As

he learns how to be of use, and as it becomes safe to trust him with tools or stock, he will be worth a small wage. If one works well, he will usually be paid all he is worth by the farmer or by some neighbor who has observed his work. If the desire to farm still persists after a year or two of farm work, at least a short winter course should be taken at an agricultural college. If possible it is very much better to take a regular four-year college course in agriculture.

Farming for middle-aged persons. A decided change in business is always a hazardous undertaking for any but young men. The man who knows nothing about farming and who has a family to support should be very cautious about leaving good wages in a city and going to farming. Such changes have been made with great success, but there have also been many severe disappointments.

One must learn the business before he can expect success in any occupation, and in any business it is rather difficult to make a living for a family while learning. Farming is manual labor. Very few persons make a success of farming who are not workers as well as managers, and these few persons nearly always come up through the labor experience. If a middle-aged person has never learned to do manual labor, such a change is still more difficult. If the members of such a family are very sure that they desire to go to farming, it is safer, if possible, to rent a small place in the country and continue with the city occupation. Some chickens and a cow can be kept, and a garden raised. The family can do most of this work. The small enterprises can be increased, and, if successful after a few years, it may be safe to leave the city work and go to farming.

Another safe method of procedure for a man with a family and small means is to put his money in a savings bank and hire out as a farm hand for at least a year before any of the money is invested in farming. The amount of wages received will not be very large, but the danger of losing the entire capital through premature investment may be avoided. Until an able-bodied person is able to earn good farm wages for someone else, he is certainly not ready to direct a farm for himself — no more so

than is a clerk ready to run a grocery store before he can earn good wages as a clerk in that store.

The farm as a home. There are thousands of persons who live on farms and who continue with their city occupation. Living on a small place enables one to raise milk, vegetables, eggs, and fruit for home use and often some for sale. This greatly reduces the cost of living. It gives a chance to provide useful and wholesome work that is such a vital part of the training of children. One of the greatest helps in encouraging this manner of living is the locating of factories in small villages or towns where the workers can get out to the land. Trolley lines have given a great stimulus to this method of living. In the last ten years there has been a great increase in the number of such places. Railroad freight rates and freight accommodations have often been unfavorable for the small town. This has been one of the chief obstacles to a still greater extension of this excellent movement.

Large farms and corporation farming. Large fortunes are usually made either by speculation or by making a little profit from each of a large number of workers. Many large fortunes have been made by buying land when it was cheap and holding it until it became expensive. Other fortunes have been made by dealing in farm land. But straight farming very rarely creates even small fortunes. Only rarely is there a farm business that compares in size with large manufacturing plants. There are many reasons why "bonanza farms" or corporation farms do not often pay.

The factory system is based on high-priced supervision. Most of the workers have only a few things to learn, and they are under close supervision. It is impossible to give close supervision to large farming enterprises because the workers are so scattered. For general farming, 40 to 80 acres of crops can be raised per worker. The number of men that might be gathered under one roof under the supervision of one superintendent would in farming be scattered over half a county.

For nearly all farm operations it is necessary that each worker be intelligent and that he take an interest in the work. We cannot have a boss watching the man on a mowing machine. If some one has to watch the driver, he may as well replace the driver and

do the work himself. There are a few operations at which gangs of men can be used, but there are very few cases in which a farm can make a continued use of a gang of men. It is very difficult to get men to take the necessary interest in large farms. If wages are high enough to attract men who will take an interest without close supervision, the high wages take all the profit.

A profit of 10 to 20 per cent on the wages of each worker is a good profit in any industry. If the industry employs a very few men, the profits will be small.

The expense of hauling crops and manure usually makes about 600 acres the limit to run from one center. But for general farming this area with half the land in pasture is a business that, measured in workers, corresponds with a grocery store that employs two or three clerks and one or two deliverymen.

The prices of farm products are based on production by the farm family working as a unit. The hired help is usually boarded in the family at much less than it costs to hire it boarded. The women wash the milk pails, care for the chickens, go to town on errands. They very frequently take the place of a man at these light operations, and also very frequently help with farm work. In Delaware county, N.Y., on 210 of the rather large dairy farms, 20 per cent of the milking and caring for cows was done by women and children. On the smaller farms the proportion of such labor is much more. All this labor is directly interested. When men are hired to run large farms, it is exceedingly difficult to produce farm products at the same cost at which they are produced by the family-farm system.

More conclusive than the reasons for failure are the results. Literally hundreds of successful business men scattered from the Atlantic to the Pacific have tried running large farms with hired managers. Most of these men have demonstrated their ability to make money in cities. The writer has seen many such farms in a number of states, but has not yet seen a case in which a man who made a fortune in a city has ever added to his accumulations by running a large farm with a hired manager. There are many cases in which the live stock has taken premiums innumerable and the crop yields have been all that could be desired, but the

profits have always been book profits. No farm is a success that does not pay all expenses, a reasonable rate of interest, and good wages to the operator, and have enough money to provide for depreciation. Many college graduates have undertaken the management of such farms. Formerly the writer recommended some of them for such places, but so far the writer has never seen an instance when such a farm paid. Yet these same college graduates have by the hundreds demonstrated their ability to make their own farms pay. Part of the difficulty is the erroneous attempt to apply the factory system to farming operations. Part of the difficulty is that the successful business man makes a fad of farming. He has too many theories to try out.

Most of the big farms that are popularly cited as examples of business organization of a farm have a monthly check come out from the city to meet the pay roll. If the writer were free to give the names of some of the well-known places that have been run for years at a loss, many of which have been written up as great successes, the list would contain many surprises for the reader.

Wealthy men who start farming with the idea of showing farmers how to farm often end by finding out some of the obstacles in the way of farming and joining with the farmers to work for their removal. By aiding in coöperation, in marketing, in obtaining railroad accommodations, and in having laws passed that give the farmer equal rights, such men have done much good. Farmers are no more and no less in need of education or uplifting than are merchants, bankers, mechanics, or any other class of our population. But farmers have been relatively too little heard in legislative halls.

A successful business man may derive much pleasure from a country place. But if he hopes to make money by farming with a hired manager, he had best profit by the experience of others. The first few years are full of hope, for then all expenses can be charged to improvements, but there comes a time when the constant deficit is disconcerting.

The writer is well aware of the fact that some large corporations are making money in farming or in enterprises closely associated with farming. He has probably visited as many such farms as

has anyone. There are some large nurseries and seed houses and other large enterprises that are doing well. But these have usually grown by the direct management of their owners. Often several generations of the same family have developed the enterprise. Such enterprises have not often been successful when started by wealthy men from the city who depended on hired managers. About the only way in which such inexperienced men have often made successes has been in buying land and holding it for a rise in price.

Even the large farms of the West where the farming is of the simplest kind are rapidly being broken up or rented. In order to manage a large tract of land profitably, it is necessary to have several centers, and the best method of management for the centers is to give the man a share in the returns, that is, rent the farm. The standard system of giving the worker a share in farm returns is to rent him the place for a share of the products.

An even less hopeful kind of farming is the corporation that sells unit orchards or other parcels of land, when the buyer has nothing to do with the enterprise except to move onto the farm sometime in the future when the farm has been made to order and is to be producing a fine revenue. Such schemes profit from selling to city persons only. Farmers rarely make such investments, except when they are the promoters. Those who understand farming know better than to make such investments.

IOWA AND BAVARIA CROP YIELDS PER ACRE AND PER MAN

By E. A. Goldenweiser, United States Department of Agriculture

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ENTHUSIASTS for higher yields per acre have frequently made the statement that the European farmer, by dint of careful work, makes his land yield a great more than does the American farmer. The defenders of American agriculture, on the other hand, maintain that the significant figure is not the yield per acre but the yield per man, since the farmer's standard of living depends on the income per man rather than per acre.

It has been claimed, for instance, that while the Bavarian farmer produces seven times as much per acre as the Iowa farmer, the latter produces six times as much per man as the former. Such a comparison is significant because Iowa is representative of the best American agricultural practice and Bavaria is not far from the average for Germany. An examination of the yields per acre of wheat, oats, barley, rye, potatoes, and hay shows that the yields in Bavaria are indeed somewhat higher than those in Iowa, the yield of wheat being 21.4 bushels in Bavaria (1911) and 15.3 in Iowa (1909); the yields of oats, barley, and rye also being higher in Bavaria, while the potato yield in Bavaria was 138.5 bushels as compared with 86.8 bushels in Iowa, and the hay yield was 2.2 tons in Bavaria as compared with 1.6 tons in Iowa. Thus it appears that Bavaria has something of an advantage over Iowa in yield per acre of the crops grown in both places, but this advantage is more than overcome by the fact that Iowa produces nearly 350 million bushels of corn, at the rate of 37 bushels per acre, while Bavaria raises no corn at all. Owing

ACREAGE AND PRODUCTION OF PRINCIPAL CROPS IN IOWA (1909) AND IN BAVARIA (1911)

Item	Wheat	Corn	Oats	Barley	Rye	Potatoes	Hay[1]	Aggregate
Acreage								
Iowa	526,777	9,229,378	4,655,154	571,224	42,042	169,567	5,046,185	20,240,327
Bavaria	714,304		1,242,464	874,491	1,396,526	901,449	3,152,281	8,281,515
Production								
Iowa (bushels)	8,055,944	341,750,460	128,198,055	10,964,184	570,996	14,710,247	7,823,181 tons	
Bavaria (pounds)	915,207,000		1,580,656,000	1,159,462,000	1,830,316,000	7,485,643,000	13,792,948,000	26,764,232,000
Yield per acre								
Iowa	15.3 bu.	37.1 bu.	27.5 bu.	19.2 bu.	13.6 bu.	86.8 bu.	1.6 tons	
Bavaria	21.4 bu.		39.8 bu.	27.6 bu.	21.8 bu.	138.5 bu.	2.2 tons	
Feed value (ratio to pound of wheat)								
Iowa	60	56	32	48	60	10	650	
Bavaria	1	1	$\frac{8}{16}$	$\frac{4}{6}$	1	$\frac{1}{10}$	$\frac{1}{3}$	
Feed value in pounds of wheat								
Iowa	483,356,640	19,138,025,760	4,102,337,760	526,280,832	34,259,760	147,102,470	5,085,067,650	29,516,430,872
Bavaria	915,207,000		843,016,533	927,569,600	1,830,316,000	748,564,300	4,597,649,333	9,862,322,766
Pounds per acre								
Iowa	918	2074	881	921	815	868	1008	1458
Bavaria	1281		679	1061	1311	830	1459	1191
Pounds per person engaged in agriculture								
Iowa[2]	1421	56,265	12,061	1547	101	432	14,950	86,777
Bavaria[3]	1970		1815	1997	3940	1611	9898	21,231

[1] Includes forage. [2] 340,142 in 1910. [3] 464,521 in 1907.

to the high productivity of corn, it appears that when the yield per acre of all the important crops in both places is reduced to an equivalent in terms of feed units (= 1 lb. of corn or wheat), the production in Iowa is expressed by 1458 units per acre, while that in Bavaria comes to only 1191 units. The production of these crops does not, of course, comprise all of the agricultural activities of either locality, but it may perhaps be considered representative of actual conditions. The production in Iowa of the crops mentioned was 86,777 feed units per person engaged in agriculture, while that in Bavaria was 21,231 units per person so engaged; the Iowa farmer, therefore, produced more than four times as much, man for man, as the Bavarian farmer. A table showing the basis of this discussion is appended.

To sum up, Iowa has a natural advantage over Bavaria in that she can raise corn, but she has an even greater advantage in that the distribution of land and the methods of agriculture practiced by her farmers are such that the average person working on a farm in Iowa receives a return for his labor that is four times as great as that obtained by the peasant tilling the soil of Bavaria.

II. AGRICULTURAL HISTORY

A. EUROPEAN

AGRICULTURE IN THE MIDDLE AGES

By William Francis Allen

IT SHOULD be observed in general that when we speak of the progress of agriculture during the five hundred years that have elapsed since the period which I am about to describe, the progress must be understood to consist rather in improved methods and a greater variety of crops than in care and thoroughness of cultivation. The English estates in the fourteenth century were devoted to the production of a very few crops, of a quality no doubt far inferior to those of the present day, with clumsy and inefficient tools, by unskillful processes, and with no basis of scientific knowledge; but, assuming all these deficiencies in matters of detail, the cultivation was as a whole careful and systematic. They made the most of what knowledge and facilities they had. It would probably be safe to say that at the present day, with all the unquestioned advance in processes and materials, there is more superficial and slipshod farming than there was five hundred years ago. Our opportunities are greater, and we get better results on the average; but our better results are perhaps due to our superior opportunities more than to the use we make of them.

I have said that the progress of agriculture in modern times has consisted mainly in improved processes and greater variety of crops. The first point of inquiry is, therefore, What crops were cultivated, and for what object? Agricultural operations are designed either to supply the immediate wants of men in the production of food or to provide materials for manufactures; or,

again, either of these classes of products may be exported to foreign countries in exchange for other commodities. The Wisconsin farmer produces wheat for immediate consumption, wool for manufacturing into cloth, and both wheat and wool for export. Now with these last two objects the medieval farmer had little to do; neither manufactures nor commerce existed on a very large scale. Every country was in the main self-supporting; that is, each provided by its own production for its own wants. And what is true of the country is also true in a degree of every estate. The estates, or manors, were large, embracing generally an entire township; and each estate produced corn and meat for its own needs, brewed its own beer from its own barley, and wore garments made by its own women from the fleeces of its own sheep, purchasing whatever foreign articles it required with its surplus.

Small communities like these, which had this habit of depending almost exclusively upon their own productions, with no large and constant channels of exchange, and no facilities for quickly meeting sudden and unexpected demands, were liable to great fluctuations in the value of their products and to real suffering from deficient crops. Famines were frequent in those days, just as they are now in the remote parts of the East. In the five years from 1316 to 1320 wheat ranged from $4\frac{1}{2}$ to 16 shillings a quarter (of eight bushels).

Manufactures, as a distinct branch of industry, hardly existed at this time, except in some parts of the Continent. And for the purpose of home manufacture the products required were few and simple. I have said that the estates were large, containing in general a whole township; but this estate, or manor, contained a multitude of agricultural tenants of various grades, and a village, with its laborers and artisans, sufficient for all the simple requirements of village life. The carpenter and the wheelwright were supplied with timber from the woods of the manor; the herds of cattle furnished leather, the flocks of sheep furnished wool; iron alone had to be purchased from outside. And there was scarcely any other material for manufacture needed; wool was the almost exclusive wearing material, although for other purposes coarse

cloths were made of hemp, and linen was always more or less in use, yet not very generally until the fourteenth century. There was likewise some production of dyestuffs.

Neither did commerce make any large demands upon medieval agriculture. There was but one commodity of English production which was exported to any extent, and that was wool. England was at this period the great wool-producing country of northern Europe, its moist and equable climate peculiarly adapting it to grazing. This was exported chiefly to Flanders, which was the principal seat of the manufacturing industry; but in the course of the fourteenth century numbers of Flemings — driven away by the disorders and misgovernment of their native land, and perhaps partly by the inundations upon their coast, and attracted by the prosperity and freedom of England — settled in the eastern counties and established woolen manufactories there — the commencement of the manufacturing industry which has raised England to its present wealth and power.

Wool, therefore, was the one great staple of England, whether for manufacture or for export; for home consumption too, so far as clothing is concerned. The raising of sheep, which had always been an important branch of industry, assumed large dimensions toward the close of the Middle Ages, and even encroached greatly upon operations which were more strictly agricultural in their nature. Neat cattle were also produced, and, for purposes of food, large quantities of swine — always the principal animal food in rural communities. The great oak and beech forests of England afforded sustenance for great herds of these. Their capabilities were carefully examined and recorded, and in every manor the woods are given as of fifty or a hundred or five hundred swine. The cattle of all kinds were small; the average weight of oxen purchased for the royal navy in 1547 was 430 pounds, and this is no doubt about the average of the earlier centuries. The weight of a fleece of wool was rarely over 10 pounds. The dairy was also an important branch of industry, both for cheese and butter. It is a curious fact that butter, usually sold by the gallon, was considerably cheaper than lard and other animal fats — so much so as to be used for greasing wheels and for similar purposes. The

cause of this relative cheapness must have been that the cattle were so small and ill-kept that they could not supply sufficient fat even for the needs of the farm.

The common beverages were cider (proving a considerable degree of attention paid to the orchard) and beer (which, as hops were not cultivated until a later period, must have been thin and quickly soured). One is surprised to find, not only in England but in various parts of the Continent in nearly the same latitude, frequent mention made of vineyards, and the production of wine in districts where now grapes will hardly grow. This appears to have been the result of a desperate effort to overcome the obstacles of nature and make English soil yield French products, for there is no evidence that the seasons have become more severe since that time. I find it mentioned, for example, that in the winter of 1363–1364 the most intense cold continued from December 7 to March 19; and even in the south of France wine is said to have frozen upon the table before it could be drunk — a statement which I for one will never believe. No doubt the "vineyards" in England at this period grew in great part out of the difficulty of transportation, and the meagerness of international trade, being merely designed to furnish wine for the necessary services of the church. It must be observed, however, that the price of the native wine does not indicate a quality so very inferior to the imported.

Before the introduction of cane sugar, honey was an important and valuable product. It was not only the only sweetening material used in antiquity and the Middle Ages, but out of it was made a favorite drink, mead. Bee-tending was, therefore, a considerable branch of rural economy, and not only for the honey, but also for the wax. Candles were almost exclusively employed for artificial light; and while the poorer classes made use of tallow, the richer classes would have nothing but wax (sperm came in with the whale fisheries of modern times, and stearine and similar materials are purely the outgrowth of modern manufactures). Moreover, as in the case of wine, wax candles were essential for the services of the church — another reason for the great attention given to bees.

None of the branches of industry which I have mentioned — neither cattle nor bees, nor the dairy — comes very directly into the field of agriculture in the strict sense of the word, that is, the tilling of the soil. When we turn to this, bearing in mind that we have under consideration an industry which produces neither for manufacture nor for commerce, but simply to supply its own wants, we are still struck by the meagerness of the objects of cultivation. They were the cereals and scarcely anything else; no maize or buckwheat, no roots, clover, or artificial grasses (these came in in the seventeenth century), scarcely any fruits but apples and pears, although I find plums and cherries also mentioned.

First, a few words upon the crops produced for the food of animals. The cattle grazed for the most part upon the natural pastures and the stubble, and this pasturage was, like everything else in medieval husbandry, managed and superintended with great care and precision. The number of animals which each person was entitled to keep upon the common pasture and the stubble was regulated generally in accordance with his share in the arable land; tenure of arable land carried with it, usually, a specific and definite right of common. The custom was to allow each person to pasture as many animals as he had means to keep over winter. The preservation of the common for pasturage was an important matter, and I find it distinctly provided, in a document defining the rights of common, that no tree shall be planted upon the land, unless to take the place of one which should perish by decay. After the crops were harvested, the fences were removed and the stubble thrown open to pasture. In regard to this, I find a by-law laid down in one manor, for which I cannot understand the reason, that from Ascension Day to Christmas no mares with foals or cows with calves should feed upon these stubbles, under the penalty of a fine.

In the mild winters of Europe, especially in southern England, pasturage is hardly suspended altogether during any part of the winter; nevertheless, there must have been more or less stall-feeding at this season, even here, and the hay crop was an important one. As I have already said, there was no clover or artificial grass; all the more valuable were the natural meadows, which, in

the descriptions of estates, are always specified with great exactness, as are the services in harvesting. Just so it was in the early settlement of New England; the broad meadows, with their coarse wild grass, furnished the only supply of winter food for cattle, and were an essential part of every farm. Peas, beans, and vetches were largely cultivated in the Middle Ages for the food of cattle and horses.

Let us pass now to the principal crops, the cereals which formed almost the sole object of the purely agricultural operations. No doubt the implements were rude and clumsy, and the processes unscientific; nevertheless these were not at the lowest stage. The English plow, in the Middle Ages, to judge from contemporary pictures, was a heavy, two-handled article, often with a very large wheel, or pair of wheels, to help support and guide it. The manuring of the land was probably not very thorough or systematic, although both marl and dung are mentioned, and directions are given that the manure be covered, so that its qualities be not washed away in the rain. It was common to manure land by penning the sheep upon it; and it was a usual prerogative of feudal lords to require their serfs to keep their sheep in folds upon the lord's land (the so-called *jus foldae*). As to the use of dung and marl, I find in a writer of the day some elaborate and mysterious rules which I find it very hard to comprehend, and those which I can understand I am informed are mostly nonsense.

There was a regular system of fallows, and in connection with it a rude rotation of crops, but not, it may be supposed, in any sense a scientific rotation, designed to recuperate the powers of the land by the qualities of different crops. It was only that certain of the cereals were best sown in the fall and others in the spring, and it was more convenient to sow the spring corn in the field used the previous year for the winter crop than to continue each crop upon the same land. There were various systems of rotation in use, but far the most common was that known as the three-field system, in which the arable lands were divided into three large fields, for the purpose of a triennial rotation. In the so-called "tenement lands," which were occupied and cultivated by the peasants for themselves, but as tenants of the lord of the manor, each peasant had a strip in each of these fields — a

long, narrow strip, such as is seen everywhere on the continent of Europe, and in this country in the French settlements along the St. Lawrence. Each peasant had his strip by himself, separated from that of his neighbor by a narrow baulk of turf; but he must cultivate it as the rest did — in the winter field he must put in winter corn, in the summer-end field summer corn, and the fallow field must lie fallow like those of his neighbors. For, as I have said, after the crop was gathered, the fences were removed and the cattle admitted into the fields to feed upon the stubble and the baulks of turf, of course no one person could be allowed to interfere with the fencing and the pasturage of the community. Fences were therefore, at this time, for the most part, temporary rail fences, put up when the crop was planted and removed when it was harvested, as is the case in parts of the South. The hedgerows, which are so characteristic a feature of England at the present day, did not come into general use until towards the close of the Middle Ages. I find, however, in the fourteenth century, directions given in regard to hedges, that they should be of willow or white thorn — showing that they were not uncommon as early as this.

We have, therefore, as a general rule, a triennial rotation of crops, consisting for the first year of winter grain (wheat or rye), the next year of summer grain (oats or barley), while the third year the land lay fallow.

It must be understood that the year began at Michaelmas (September 29), which appears to have been the regular term for all agricultural operations, as it still is, I believe, in England. The year began at once, then, with putting in the seed for the winter crop; for this the ground had been prepared by a year of fallow, and by a threefold plowing. The first plowing, called the "plowing of the fallow" (*warectatio*), was regularly in April "when the ground is broken" (*cum terra fregerit*), meaning, I suppose, when it is dry enough to crumble and not clog the plow. Then after midsummer came the "stirring" (*rebinatio*), as it is called, "when the seeds have sprung up after the fallow plowing" (*cum terra pullulaverit post warectum*). This, it was said, should not be too deep — only enough to destroy the weeds. In the autumn manure was spread upon the land, and it was plowed a third time for the

crop — this time two fingers' breadths deeper, with broad and close furrows. Without being acquainted with the laws of chemistry these men knew by experience that the ground, when lying fallow and open, absorbed valuable ingredients from the rain and the air.

After the winter crop was harvested, the land was thrown open for grazing, until the next crop was to be put in. This stubble pasture amounted to more than might seem, for to say nothing of the green baulks of turf, which in one estate were estimated to amount to eighty acres, it was the custom, in reaping the grain, only to clip off the ears, leaving the straw standing; then to cut whatever straw was needed for thatching and other purposes, after which the cattle were turned into the field to feed upon the remainder. The next spring the summer crop was sown, and again, after this was harvested, the cattle were allowed to pasture upon the stubble until the following spring, when the plowing of the fallow commenced the preparation of the ground for the winter crop.

The plowing was usually done with oxen, commonly eight to a team. Horses were used, but their labor was more expensive; moreover, with the imperfect drainage of the time, the labor of horses was not considered so well suited to heavy, muddy land. A writer of the fourteenth century recommends using a pair of horses with a team of oxen, as being quite as efficient except in rocky land, and a good deal more economical.

The yield was small. This same writer speaks of a threefold yield as something unusual, but as certainly not remunerative. Allowing to the acre two bushels of seed, at 12 d., and reckoning the three plowings at 18 d., the harrowing at 1 d., weeding at 1 qr., reaping at 5 d., and teaming at 1 d., a yield of six bushels, he says, will be a dead loss of 3 qr., unless some profit can be made out of the straw. This statement is corroborated by the statistics collected by Professor J. H. T. Rogers, in his "History of Agriculture and Prices." For seed, two bushels of wheat and rye go to the acre; four of barley and oats; and the yield ranged from twice to eight times the seed, that is, from four to sixteen bushels of wheat, and the other crops at about the same proportion.

I have spoken chiefly of agriculture in England, that being the country in regard to which we have the best information. It would

appear that in France and Germany agricultural science was somewhat less advanced; in the south of Europe it was in a much higher condition, as might be expected from the greater advancement of these nations in the other departments of civilization. We find in Italy during the Middle Ages agricultural improvements which in the more northern countries belong only to modern times.

The great obstacles to agricultural progress were two: the simplicity of medieval life, which was satisfied with a few gross products, and the artificial restrictions of society, which hampered all individuality and enterprise.

The first of these obstacles was removed by the rapid growth of the cities in population, wealth, and power, a growth which belongs mainly to the fourteenth century. The rich burghers — plebeians as they were — were not satisfied with the coarse, unvaried fare of a baron's table, nor with the homespun garments of wool and hemp. Commerce began to supply them abundantly with the wines, silks, and spices of the South and the East, and home productions were likewise more delicate and varied. The extravagance and luxury which characterized the closing years of the Middle Ages had at least this good result, that they gave a powerful stimulus to every branch of production. From this new city life begins the first decisive progress in agriculture.

The second obstacle was also removed, but more slowly. With the breaking up of feudalism serfdom, its natural companion, perished too; but the process was a slow one, and in many parts of Europe serfdom, instead of being mitigated with the new life of modern times, was made more harsh and burdensome. Still slower to disappear was the control over modes of cultivation exercised by the communities, with their constrained cultivation in common. In some parts of western Europe these usages have not even yet disappeared; in eastern Europe they are in full operation to this day.

I have shown, I think, that with all its shortcomings, medieval agriculture was not at so very low a stage. Unscientific as it was, it was nevertheless careful and faithful; no one can look over the registers and rent rolls of the English manors of the thirteenth and fourteenth centuries without being convinced that their

proprietors were not altogether the harsh tyrants nor the serfs the abject wretches which we are wont to imagine. Different countries differed much from one another, and nowhere were the poor safe from violence and insolence; for some countries and some periods the blackest colors are none too dark to describe the abuses of feudalism. But England — with the rarest exceptions — was at all times a land of law; the serf was a freeman towards all but his lord, and even towards his lord he had legal rights which he could enforce in the courts.

In truth, the peasantry of Europe — at least, of France and England — appears to have been on the whole better off at the close of the thirteenth century than for many generations after. The grossness and violence of the feudal times were past; society was becoming settled and orderly; the bonds of serfdom were relaxed, and free institutions were rapidly springing up; England was governed by an able, vigorous, constitutional king (Edward I); commerce and manufactures were just entering upon that career which has given such marvelous results in our day. The unjust and bloody international wars of the fourteenth century; the relentless civil wars which accompanied them; the overthrow of free institutions in the fifteenth century; the religious wars and persecutions of the sixteenth century; the wholesale depreciations of the currency, by which the kings plundered their subjects; the building up of enormous estates in England, with the unwise poor laws, which gave the finishing stroke to the ruin of the peasantry; in France the crushing of all freedom and individuality; in Germany the surrendering of all power into the hands of a multitude of petty princes — all these things resulted in an almost steady depression of the peasantry in both intelligence and prosperity, until very nearly our own day.

We are in fact inclined to boast over much of the enlightenment of the nineteenth century. I am far from being disposed to question this enlightenment or the progress not only in material arts and physical science but in thought and civilization. But we should not forget that the European peasantry were the last to receive their share of the gains; and on the other hand it is well for us not to think more highly of ourselves than we ought to

think, or to fancy that our fathers, five hundred years ago, lived like the beasts of the field. Hard as was their lot, even the serfs of that period lived in a condition of comfort on the whole greater than that of their descendants of the last century. And the free agricultural laborers, who lived upon their daily earnings, had a better prospect before them than those of the present day; it was easier for them to lay up money and become the owners of land, and thus rise in the social scale.

It is a difficult thing to compare the condition of people at widely distant periods of time. The standard of living changes — the poorest of us demand comforts now which the richest could not afford five hundred years ago. The objects of consumption change — cotton, coffee, potatoes, and numerous other indispensables of the present day, were then utterly unknown. The value of money changes, — the English shilling of 1300 had three times the amount of silver in it that the present one has; and, what is of still more importance, silver has fallen enormously in value, through the discovery of the American mines. The quality of things changes — how can we compare the coarse wool, mixed with hair, of the fourteenth century, with the fine merino which we wear? Add to this that the laborers of the Middle Ages, from their relation to the manor, enjoyed a great many perquisites in the way of wood, pasture, rent, extra food, etc. — just like the freed slaves upon the Southern plantations, — which are hard to take into account with any definiteness and which yet complicate the account materially. Nevertheless a few statistics in comparing the mode of life at the two periods may be of interest if we are careful to bear in mind that the comparison is only approximately accurate. I take the year 1300, because it was before any depreciation of the currency, and before the social revolution caused by the great plague of 1348.

A day laborer at the close of the thirteenth century received on an average about 3d. a day, which, in American silver, is equal to about 18 cents; the laborer of the present day in England receives, I believe, on an average about 2s. a day (equal to 50 cents of our money), nearly three times the amount of the earlier wages. Taking, now, a few of the principal objects of consumption, we

find that the bushel of wheat then averaged about $7\frac{1}{2}$d. (47 cents); and at the present day perhaps 6s. ($1.50); barley, per bushel, then, 6d. (35 cents), now, 4s. 6d. (1.12\frac{1}{2}$); fowls, then, $1\frac{1}{2}$d. apiece (9 cents), now, 5s. ($1.25); geese, then, $3\frac{1}{2}$d. (21 cents), now, 9s. ($2.25); butter, then, $\frac{1}{2}$d. (3 cents), now 1s. 6d. ($37\frac{1}{2}$ cents); wool, then, 3d. (18 cents), now, 12d. (25 cents). So that while money wages are not quite three times as high, corn is a little over three times as high and butter and poultry have risen enormously; wool, however, was then relatively dear, probably because of the great foreign demand. As to meat, it is hard to make the comparison, because it was not quoted by the pound. Professor Rogers[1] estimates it (p. 684) at $\frac{1}{4}$d. a pound (less than two cents); cows averaged about 8s. ($10.00), and sheep about 1s. (75 cents); no doubt they were very small, as were perhaps the fowls and geese. Of other articles, 1000 herrings cost 2s. 10d. (2.12\frac{1}{2}$), — I find them now quoted at £3 ($15), — eggs cost 4d. for 10 dozen (5 for a cent); wine, 4d. a gallon (25 cents); pepper, 1s. 6d. a pound (1.12\frac{1}{2}$); a shirt cost $5\frac{3}{4}$d. (35 cents); an axe, 8d. (50 cents); a hoe, $2\frac{1}{2}$d. (15 cents); and a plow, 1s. (75 cents).

Cloth, as might be expected from the price of wool, was dear; but then we must remember that most peasants kept their own sheep, and made their own cloth. Coarse woolen cloth was quoted at 1s. 2d. ($87\frac{1}{2}$ cents) a yard (apparently a yard and a half wide); a pair of boy's shoes at 4d. (25 cents).

From all these facts I think it is clear that the English laborer of the fourteenth century, especially when we take into account the various small perquisites that were attached to his semi-servile condition, had a much greater command of the necessaries of life than his modern representative. Clothing was dearer, but bread was cheaper, and meat and all other necessary commodities were very much cheaper, in proportion to his wages. And what is true of the day laborer is true in a still higher degree of the small farmer, for to him, a producer of wheat and wool, the high price of these articles was a positive gain.

[1] Professor J. E. T. Rogers, "History of Agriculture and Prices."

INCLOSURES IN ENGLAND IN THE SIXTEENTH CENTURY

By Edwin F. Gay

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TEN years ago Professor Ashley gave us with his valuable chapter on the Agrarian Revolution the first map of the inclosures of the fifteenth and sixteenth centuries. This pioneer attempt at a graphical representation of one of the most interesting and important movements in English social history was based on the scanty local references in contemporary literature and on the agricultural surveys of the eighteenth century. From the inadequate evidence then at hand this map necessarily left much to be desired. In the interval, however, new and fuller sources have been opened and in part made accessible by publication. And, though this fresh evidence can scarcely be termed adequate, nevertheless, with its more precise data, it permits of a new attack upon the problem of the extent of the inclosure movement in England during this period. A new map, in some respects materially correcting the former and suggesting a somewhat different estimate as to the magnitude of the agrarian change, may now be constructed with the materials furnished by contemporary official investigations.

The material herewith presented bases itself solely, therefore, upon the information gathered by government commissioners sent out under the influence mainly of successive waves of popular discontent. They collected the presentments of local juries as to the depopulation and decline of tillage caused by the inclosure of the open fields of the old agricultural system and by the conversion from arable to pasture of the land thus hedged in. These investigations or inquisitions were made in the years 1517–1519,

1548, 1566, and 1607.[1] The inquiries of 1548 and 1566 were apparently not pushed very far. At any rate we now possess for that of 1548 but a few meager notes from Warwickshire and Cambridgeshire,[2] while the inquisition of 1566, with trifling data from Leicestershire, gives only enough from Buckinghamshire to indicate the steady progress of the movement for this region in the mid-century.[3] But the two inquisitions of 1517–1519 and of 1607, each covering a retrospective period of some thirty years, furnish a considerable amount of serviceable material. Of the first of these, the larger and more important part, edited by Mr. Leadam, has been published by the Royal Historical Society; the second still awaits publication. Though some part of the work of these commissioners is now, through time and neglect, either lost or indecipherable, there is reason to believe that the lacunæ are inconsiderable, at any rate cannot materially affect the general conclusions that may be drawn from the map and the statistical tabulations founded upon these documents. There are preserved either in abstract or in full the presentments for twenty-three counties returned to Chancery by the commissioners of 1517–1519,[4] and, though the extant returns of 1607, now in the Record Office in London, give evidence from but six counties, these six are in the Midlands, the center of the inclosing activity of the period. The entries in these returns supply normally the names of the offenders responsible for the decay of farmhouses or for the inclosure and conversion to pasture of arable land, the place

[1] I do not include the commission of 1636. The Public Record Office in London contains the accounts of compositions made by inclosers as a result of this commission, but the returns upon which these compositions were based have not yet been found.

[2] The Warwickshire entries are printed from Dugdale's MSS. in Leadam's "Domesday of Inclosures," 1897, Vol. II, pp. 656, 666. The Cambridge presentments (C. H. Cooper, "Annals of Cambridge," Vol. II, p. 38), are probably to be referred to this commission.

[3] I have also entered upon the map the few items concerning Middlesex preserved in a jury presentment of 1556. Hist. MSS. Com., Vol. XV, Pt. II, pp. 258 ff.

[4] Mr. Leadam has published the Lansdowne abstracts for ten counties in the Transactions of the Royal Historical Society, 1892–1894, and the original Chancery returns for nine additional counties in his "Domesday of Inclosures." Returns for four more counties have since come to light. See my list in Transactions of the Royal Historical Society, Vol. XIV, p. 238, n. 2.

and the date of such offense, the acreage of the land affected, and other details, such as the number of persons evicted and the number of plows laid down, which did not fall strictly within the scope of their inquiry. The intention was to gather the information necessary for prosecution under the Husbandry Act of 1490 (4 Henry VII. C. 19) and the subsequent similar statutes; and while at times, notably in the case of large and heinous inclosures, more detail is given than the law required, as a rule less is given than the modern student of Tudor social history would desire, sometimes, it must be added, too little for the legal purposes of statutes which even contemporary lawyers found obscure and labyrinthine. Recourse must be had, therefore, to interpretation and inference. A considerable number of the entries, for instance, present simply the decay of a house of husbandry possessing twenty or more acres of land, — the specific offence under the Act of 1490, — no mention being made of an inclosure or of conversion to pasture. But there can be little doubt, both from the words of the statutes, from the evidence of subsequent legal proceedings initiated under these presentments, and from contemporary complaint that this destruction of farmhouses, as a rule, tacitly implied an accompanying inclosure of the farmhold for grazing purposes. It would probably, however, be too sweeping an inference to treat all such entries as cases of inclosure and conversion. A certain limited proportion of the presentments are doubtless to be taken as meaning what they say with no further implication, simply that a farmhouse has been emptied of its husbandmen, and the land usually held with it has been "severed" from its house, — a word usual in the inquisition of 1607, — and consolidated with other holdings in the unchanged open fields. But the combined process, the emptying the house of its farming tenants, the consolidation and hedging in severalty of its appurtenant acres, and the laying down of this land to grass, was no doubt the "decay" aimed at by popular outcry and legislative action. Interpretation of the inquisitions in this sense seems, therefore, in the main justifiable. Yet it is not only conceivably possible, but probable, that the different steps in this process were occasionally separated in practice. As has just been

remarked, there could be eviction or eviction and decay of the house simply or accompanied by a severaling of open-field strips without inclosure and without conversion, and *vice versa* there could be inclosure or even inclosure and conversion (under a convertible husbandry) without the decay of a husbandman's house. Decay might be associated with conversion to pasture without new inclosure, not only in the old inclosed districts, but, if the returns of 1607 are to be trusted, in the open-field country. In view of these complications it has seemed advisable, in constructing the inclosure map, to summarize results as little as possible, and by the use of a number of distinctive signs, even at the risk of taxing eyesight and patience, to give a full and unbiased graphical translation of the record. But, in the accompanying table, presenting in abbreviated form some of the statistical results of an analysis of the returns of 1517 and 1607, I have preferred not to burden the page with the minuter distinctions of tabulation. The subjoined figures illustrating the extent of the inclosure movement will be confined, therefore, to the acreage affected in each county, with its percentage of the total land area of the county, the number of villages or hamlets from which returns are forthcoming, the number of houses of husbandry decayed or turned into cottages with little or no land, and, finally, the number of persons mentioned as displaced by the agricultural change, though, owing to the variable character of the returns in regard to this last item, the figures are of inferior value.

To those acquainted with what has been already published of these inquisitions, it scarcely needs remark that any statistical tabulation of their data must be open to cavil. Historical statistics at best are rarely satisfactory, and the entries which in this instance furnish the raw material are themselves often so vague or deficient that statistical deductions, though made in each individual case with the most cautious objectivity, leave a residuum of misgiving. It is often difficult, for example, to determine whether entries found in the supplementary inquisitions of 1518 are or are not duplicates of those of the returns of 1517. Virgates and carucates must be reduced to acres by some kind of a county average. Texts that are in part illegible or obscurely worded must be

County	Total Land Area of County[1] Acres	Inclosure Inquisition of 1517–1519 (1485–1517)						Inquisition of 1607 (1578–1607)					
		Acreage affected	Percentage of total county area	Number of places	Houses of husbandry		Number of persons displaced	Acreage affected	Percentage of total county area	Number of places	Houses of husbandry		Number of persons displaced
					Decayed[2]	Made cottages					Decayed	Made cottages	
I. *Northern*													
Chester	647,821	65½	0.01	5									
York, W.R.	1,758,775	1,837	0.10	28	18		58						
York, N.R.	1,357,666	2,503	0.18	28	30		82						
York, E.R.	751,743	1,384	0.18	25	31		135						
II. *Western*													
Salop	856,316	1,859	0.22	71	23		356						
Hereford	536,048	1,185	0.22	18	20	2							
Gloucester	800,253	3,681½	0.46	20	42	7	211						
III. *Midland*													
a Stafford	737,944	538	0.07	13	4		15						
a Derby	648,133	620	0.10	7	15	3	56						
a Notts	536,595	4,470	0.83	80	71		188						
b Warwick	576,195	9,694	1.68	70	189	18	1018	5,373	0.93	28	62	26	33
b Leicester	530,799	5,780½	1.09	49	136	12	542	12,290½	2.32	70	151	21	120
b Rutland	97,085	531	0.55	15	26								
b Northampton	636,244	14,081½	2.21	112	345	9	1405	27,335½	4.30	118	201	157	1444
c Oxford	478,036	11,831	2.47	107	176	10	720						
c Buckingham	477,307	9,921	2.08	70	160	12	887	7,077½	1.48	56	29	51	86
c Bedford	301,817	4,137	1.37	36	89		309	10,004	3.32	69	47	75	259
c Berks	459,403	6,392	1.39	86	116		588						
c Middlesex	147,170	2,236½	1.52	18	11	1	123						
d Huntingdon	(233,203)							7,677½	3.29	52	59	87	290
d Cambridge	551,475	1,402	0.25	8	1								
IV. *Eastern*													
Lincoln	1,691,911	4,866½	0.29	63	70		158						
Norfolk	1,307,058	9,334	0.71	122	70								
Essex	976,125	1,248	0.31	9	12		38						
V. *Southern*[3]													
Hants	1,048,808	1,035	0.10	17	8		42						
Somerset	1,037,231	660	0.06	13	8								
Total	18,947,958	101,293	0.53	1090	1647	74	6931	69,758		393	549	417	2232

[1] County areas (land only) are as last revised by the Director-general of Ordnance Survey.
[2] Including cottages decayed.
[3] Wiltshire, with only one entry of a house decayed and one plowland converted to pasture, is here omitted.

elucidated. These are but a few of the many perplexities. But, with all allowance made for deficiencies of text and errors of interpretation, the totals for the first inquisition of 1517 may at any rate be taken as a minimum estimate of the inclosures of the period 1485–1517 and as a fair index of the relative extent of the movement in different sections of England.

The temptation lies near to attempt, by utilizing these partial results as a basis, to form some rough general notion of the whole progress of the agrarian change down to 1607. But, in yielding to it, the rather hazardous nature of the venture must be clearly kept in mind. Three gaps in our table must be filled, the period of at least thirty years before 1485, the sixty-year span between 1518 and 1577, and the thirty years from 1578 to 1607 in those counties for which we have returns in 1517 but not in 1607. What shall be the conjectural estimate of the rate of the movement's progress during these intervals, — was it equal to that from 1485 to 1517, or was it greater or less? We have, again, in the second place, figures from twenty-four counties. Shall a hypothetical increment be added for possible inclosures in the sixteen English counties not represented in either of the two chief official inquiries? And, if we are mainly to operate, as we must, with the statistical results of the inquisition of 1517, even supposing that we possess practically all the work of the commissioners, can we be at all sure that they did their work thoroughly, that they did not overlook or have concealed from them or even themselves conceal or palliate a considerable number of inclosure cases? Can any reckoning, to ask this third question, be made of a coefficient of error, intentional or otherwise? To the second and third queries, as far as any statistical valuation is concerned, the answer must be a *non possumus*. For the first, and for any merely general anwer to the other questions, we are reduced to surmises — to an uncertain balance of probabilities derived from the vague evidence of contemporary literature and legislation or from a few inadequate statistical data. A consideration here in detail of these doubts would take us too far afield; it must suffice to state

the conclusions or impressions which have seemed to justify the method adopted.[1]

Regarding the impeccability of the inclosure commissioners, it may be granted at once that, despite Wolsey's undoubted zeal stimulating their efforts, they likely enough failed to gather in their net all the offenders of the preceding thirty years. We know too well the character of the local juries of the time, the nature of the pressure which the great landholders could exert, to have implicit faith in the full reliability of their presentments. Such pressure, especially in opposition to a Tudor royal commission, would sedulously avoid publicity; direct evidence of tampering with juries would in any specific instance not now be easy to obtain. But some slight evidence has come down to us concerning these very inquisitions, and we are not left to mere suspicion. Furthermore, it is often noticeable that pains were seemingly taken to remove the sting from the entries which pointed to the commissioners as themselves transgressing. But that such entries were made at all, that they were only rendered legally harmless instead of being suppressed outright, has a certain significance. On the whole, it may, I think, fairly be doubted that any considerable suppression or perversion of fact was attempted. The allowance for this element of error need not be far-reaching. There exists, however, in any case no sufficient basis for a numerical estimate of this factor in the problem.

The same holds true to some extent of the second doubtful element, the possibility that counties not represented in our list may have contributed some noteworthy quota to the sum total of inclosures, though here we are on somewhat firmer ground. It is probable that in some of these sixteen counties a certain amount of inclosure was going on, but there is little outside evidence of it. The dean of Durham was doubtless indulging in the usual exaggeration of the time when he wrote, in 1597, that in the bishopric of Durham "500 plows have decayed in a few years" and "of

[1] A fuller discussion of the points here raised will be found in a forthcoming issue of *Schmoller's Forschungen*, where I deal at length with the question of the extent of the inclosure movement.

8000 acres lately in tillage now not eightscore are tilled," [1] but it is evident that at least towards the close of the century the movement, or something very like it, was spreading northward to a region untouched by the official investigations. Closer examination, however, shows that most of these sixteen counties really lay outside the sphere of the inclosure movement of this period. They belonged in large measure to the old inclosed country, where the agricultural system was radically different from that of the open-field districts, a country where inclosures had prevailed from a time long anterior to this movement of the fifteenth and sixteenth centuries. To these old inclosures we must later briefly revert. For the present we have simply to note that they do not enter as a disturbing factor in our estimate with a weight of which we need or can take account.

The third question as to the rate of progress remains. Professor Ashley limits the "precipitate change" for this period to the sixty years between 1470 and 1530. "After about 1530," he says, "the movement somewhat slackened." [2] Dr. Cunningham, on the other hand, speaks of the "rapid progress of enclosures" towards the middle of the century, and gives a modified adhesion to the view widely held that the change of ownership at the dissolution of the monasteries gave a new impetus to the movement.[3] The former of these opinions rests largely upon a misapprehension as to the nature of the old inclosed districts, the latter has little substantial evidence to support it. Such evidence as there is, however, points to the conclusion that there was no perceptible slackening throughout the century. Not only do we witness an undiminished volume of contemporary complaint, a

[1] Cal. S. P. Dom. Eliz., 1595–1597, p. 347. In a later letter (p. 348) the "few years" become fifty years. "In Northumberland," he adds, "great villages are dispeopled," and these decays (p. 542) "are not, as supposed, by the enemy, but private men have dispeopled whole villages." About the same time, Tobie Matthew, bishop of Durham, is urging on Lord Burghley the revival of the statutes for tillage (Hist. MSS. Com., MSS. of the Marquis of Salisbury, Vol. VII, p. 453). The Agricultural Survey of 1810 dates the first inclosures in Durham from 1658 (p. 86).

[2] Ashley, Introduction to English Economic History, Vol. I, Pt. II, p. 286.

[3] Cunningham, Growth of English Industry, etc., 3d ed., Vol. I, p. 531.

continued agitation and repeated efforts at investigation and repressive legislation, but we have the supporting testimony of the unpublished inquisition of 1566 for Buckinghamshire and of a long series of prosecutions against inclosers under the Elizabethan Tillage Act of 1563. The Buckinghamshire returns cover but five of the eight hundreds of the county, and, so far as can be made out from the often vague dating of the entries, deal with comparatively recent offences, probably with those occurring within less than ten years instead of the thirty of the more important inquiries of 1517 and 1607. Yet even with these limitations it tells of 4065½ acres as affected by the inclosures in 50 towns of this single county. We seem to be dealing with a movement which at least from the middle of the fifteenth century was gradually but steadily acquiring momentum, and the figures for the period 1485–1517 may be used as a basis of reckoning, with no fear of thereby overestimating the amount of inclosure.

There is, indeed, more than a likelihood that any result so obtained will err in somewhat underestimating the acreage affected by the agricultural change. But for the rough approximation which is all we can hope to obtain it may sufficiently serve the purpose to construct a conjectural table from the known figures of the 1517 inquiry. We may assign a hypothetical figure for the thirty years preceding 1485, say an acreage equal to the returns from 1485 to 1499. Acting on the presumption that in the sixty years from 1518 to 1577 the rate of inclosing was at least equal to that of the period 1485–1517, we may double this known acreage, or, in the case of the six counties for which we have the acreage for the thirty years 1578–1607, we may take the sum of the two periods. Finally, in the case of the eighteen counties reported on in 1517, and not in 1607, we insert the earlier figures, and obtain the following conjectural results. The purely inferred totals in the table are indicated by italics.

Hypothetical as these figures are and somewhat underestimating the amount of inclosure as they probably do, they nevertheless, I venture to believe, bring us appreciably nearer the actual

Counties	1455–1484 Acres	1485–1517 Acres	1518–1577 Acres	1578–1607 Acres	Total (1455–1607) Acres	Percentage of Total Area
I. Northern (2) . .	2,866	5,789½	11,579	5,789½	26,024	0.58
II. Western (3) . . .	1,344½	6,725½	13,451	6,725½	28,246½	1.62
III. Midland (14) . .						
a	1,050	5,628	11,256	5,628	23,562	1.23
b	13,287	30,087	75,617	44,999 531	164,521	8.94
c	13,442	34,518	72,059	17,081½ 20,459½	157,559	8.45
d	4,849	1,402 7,677½	18,159	7,677½ 1,402	41,167	5.25
Total, *a–d* . .	32,628	79,312½	177,091	69,758 28,020½	386,810	6.03
IV. Eastern (3) . . .	6,441	15,448½	30,897	15,448½	68,235	1.72
V. Southern (2) . .	577½	1,695	3,390	1,695	7,357½	0.35
Total	43,857	108,971	236,408	127,437	516,673	2.76

facts than any notions based upon the unsatisfactory evidence of the sixteenth-century literature, hitherto our main reliance. It is, I repeat, probably under rather than over the truth to say that in the century and a half before 1607 something over half a million acres of cultivated land were taken out of the hands of the tillers of the soil, and inclosed for sheep pasture. But, granting freely to the arguments for an extent of inclosure larger than our figures indicate all the consideration they deserve, the estimate could still be considerably increased and yet be far from supporting the extravagant assertions of contemporary and of modern writers. In truth, all the literary evidence of the period must be treated with a mistrustful caution. Its very exaggeration condemns it. It is impossible to believe that by the first quarter of the sixteenth century the population by reason of these inclosures had been "inestimably" diminished[1] and "mervaylous multitudes"[2] reduced to beggary and crime, that at the close of another quarter of a century two thirds of the land of England were untilled and in "marvelous desolacion,"[3] when still each later generation reported that inclosing and its attendant depopulation were proceeding upon an unexampled scale. To cite but single specimens of these reports, Pilkington (shortly before 1575),[4] the Parliament of 1597,[5] Powell, in 1636,[6] were convinced, in the words of the last, that the evil was never "so monstrous, never so great." The statements of the men who witnessed the inclosing movement cannot, unfortunately, be accepted as "certain proofs"[7] of the extent or

[1] Proclamation of 14 July, 1526, Harl. MS. 442, f. 64.

[2] Preamble to 25 Hen. VIII. c. 13 (1534).

[3] Bishop Scory in Strype, Eccl. Mem., edition of 1822, Vol. II, Pt. II, p. 482. And Proclamation of 1 June, 1548, Soc. of Antiq. Proclam., Vol. III, No. 24.

[4] James Pilkington, Exposition on Nehemiah, in Works, published by Parker Society, p. 462.

[5] 43 Eliz. cc. 1, 2.

[6] Robert Powell, Depopulation Arraigned, 1636, p. 37.

[7] Über die Ausdehnung dieser Umwandlung liefern die Werke von Latimer, Starkey, Stafford, Harrison, u. a. untrügliche Beweise (E. C. K. Gonner, in "Handw. d. Staatsw.," 2d ed., Vol. II, p. 391). Cunningham thinks that "the remarks of such writers as Sir Thomas More, the chancellor of the Realm, and Thomas Starkey, a Royal Chaplain, are conclusive as to the wide range over which the change was progressing."—"Growth of English Industry," 3d ed., 1896, Vol. I, p. 526.

real social effects of the change. Their vision was too restricted, too prejudiced, too jaundiced. And moderns who, misled by them, could assert that by 1607 "in the greater part of England the inevitable change (from arable to pasture) had been already accomplished," [1] must not only be unmindful of the social pessimism and the habit of loose statement common at the time, but must close their eyes to such facts as the comparatively steady range of grain prices during the century and the existence much later of great areas of still uninclosed open field. The dispeopling of the countryside by covetous inclosers was one of the great bugbears of the period; but, apart from the indirect evidence of grain prices and eighteenth-century agricultural surveys, an examination of the contemporary inquisitions of depopulation tends to divest this specter of its terrifying proportions.

If we are to sum up the broader conclusions of such an examination, this shrinkage which it necessitates in the estimate of magnitude of the inclosure movement would be the first thing to be noted. An agricultural change affecting 2.76 per cent, or even 5 per cent, of the total land area of twenty-four counties in a century and a half is surely nothing very alarming. The gradual displacing of the agricultural population from their customary employment at the rate of 7000, or even 10,000, every thirty years, would doubtless cause a certain distress in a body politic of England's dimensions in the sixteenth century. With the ignorance and hidebound conservatism of the English peasant, such a change would be more bitterly resented, the ill effects of such an uprooting more pronounced, than a similar social adjustment in the much more fluid industrial population of to-day. Yet the friction from inclosures, though thus relatively great, seems, nevertheless, in reality to have been confined to a comparatively small section of the people, and the shifting of population to have gone on gradually through successive generations. It might be urged that, in so far as it was effective, this mobilizing of the population, though its beginnings at the time would be felt as a social evil, was actually a national blessing in disguise,—a necessary first step towards England's later industrial supremacy.

[1] S. R. Gardiner, History of England, edition of 1893, Vol. I, pp. 354, 355.

And it might be argued that the social effects of the exchange in some districts of grain for grass were to a certain extent offset by the quiet growth during the century of that movement towards the reclamation for arable of waste land, which became more marked in the two following centuries. But it is not difficult to realize how this tradition-defying change would lend itself to exaggeration in the imagination of the time. The eviction of husbandmen with their families,

> The forlorne father hanging downe his head,
> His outcast company drawne up and downe,[1]

the sight of the deserted homes and ruined churches,[2] perhaps as much as anything the tales of misery, losing nothing in repetition, which were spread abroad by the beggars swarming over the country and representing themselves, as they doubtless sometimes were, as the victims of landlord oppression,[3] — all this would be magnified into a menacing social evil, a national calamity responsible for dearth and distress, and calling for drastic legislative remedy. But, freed from contemporary hysterics, the specific inclosure movement of the period reveals itself as one of comparatively small beginnings, gradually gaining force through the sixteenth century and continuing with probably little check throughout the seventeenth century, until it was absorbed in the wider inclosure activity of the eighteenth century. If the general breaking up of the old three-field husbandry by this inclosure is to be called an "agrarian revolution," it was one which spread over three centuries of slow development, and found its real climax

[1] Thomas Bastard, *Chrestoleros*, 1598, lib. iii, epig. 22, ed. Grosart, 1880.

[2] Joseph Hall, *Virgedemiarum*, ed. 1825, lib. v, sat. i.

> Would it not vexe thee where thy syres did keepe,
> To see the dunged foldes of dag-tayled sheepe,
> And ruined house where holy things were said.

[3] "Question many of our Beggers, that goe from dore to dore, with wife and children after them, where they dwell, and why they go begging. Alas master (say they) we were forced out of such a town when it was inclosed, and since we have continued a generation of Beggers" (John Moore, "The Crying Sin of England," 1653, p. 8). An answer to Moore pertinently suggests: "Whether all they tell him in that kind to be true, or no, hee maye doe well to enquire, and not take it upon trust." — "Considerations concerning Common Fields," 1654, p. 17.

only after 1760. And the conversion of arable to pasture with the accompanying displacement of population — if in this lay the essence of the "revolution" — was for England, as a whole, in the sixteenth century scarcely comparable with the analogous change of the last thirty years. The statement that the sixteenth-century inclosure movement swept devastatingly over the English peasantry like the Black Death can only be termed a gross exaggeration.[1]

In the second place the statistical results from the inquisitions of depopulation, illustrated by the map, indicate that anything like activity in inclosing was limited to the Midland counties. This inference from our figures is confirmed by a study, in so far as the summary Record Office catalogues will permit, of the inclosure cases which during the first half of the sixteenth century were brought before the so-called Poor Men's Courts — the Courts of Star Chamber and of Requests. It is borne out by the long list of prosecutions under Elizabeth's first Tillage Act (5 Eliz. c. 2), which are entered on the Exchequer Memoranda Rolls of the King's Remembrancer. From this latter source I have noted cases of inclosure during the period from 1558 to 1603, and of the 221 places here mentioned, the Midland counties alone furnish 51 per cent. The acreages in these suits do not seem trustworthy, given as they usually are by the informers in round and probably exaggerated figures; but here, again, of the total acreage the Midlands furnish 73 per cent. Within this central area it is, as in the previous results, the group *b* made up of the counties Warwickshire, Leicestershire, and, above all, Northamptonshire, which was preëminently the field of the incloser's enterprise.[2]

The contemporary literature in its vague denunciation too rarely condescends to facts and places; but here also as far as it can be localized it refers to the Midlands. Rous and the Vicar of Quinton, at the close of the fifteenth century, brought from southern Warwickshire and the neighboring northeastern part of Gloucestershire the first clear and unmistakable reports as to the character of the change.[3] Armstrong specified "the Mydell parts of the body of the realme"[4]; the tract Certayne Causes, the counties of Oxfordshire, Buckinghamshire, and Northamptonshire.[5]

The Tillage Act of 1555 recognized that certain parts of England were not affected in such a manner as to require legislative interference. Elizabeth's Act of 1597, with more precision, named these comparatively untouched counties as lying in the northwest, east, and south. John Hales, about 1549, laid the scene of his dialogue at Coventry, in the center of England;[6] and a century later Halhead wrote against the same depopulating inclosures for sheep-farming from the same county of Warwickshire.[7] Practically all the contemporary indications — and the list of references could easily be extended — point in the same direction, to the Midland district.

[1] A. Hasbach, Die englischen Landarbeiter und die Einhegungen, 1894, p. 20.

[2] Inclosure cases under Act 5 Eliz. c. 2 (Exch. Mem., King's Remembrancer):

	1558–1603	
	Number of Places	Percentage of Total Acreage
I. Northern counties	25	5.02
II. Western counties	15	4.61
III. Midland counties		
a	18	2.90
b	60*	52.41*
c	31	15.68
d	3	1.70
Total, *a–d*	113	72.72
IV. Eastern counties	48	12.52
V. Southern counties	17	4.08
Pembroke, Wales	3	1.05
Total	221	100.00

*Northamptonshire, 34 places and 40.25 per cent of the total acreage.

[3] J. Rossi, *Historia Regum Angliae*, ed. 1745. He names (pp. 122–124) some fifty-four places which within a circuit of thirteen miles about Warwick had been wholly or partially depopulated before about 1486. He seems (p. 116) to be aware that the movement is confined "in umbelico regni." The letter of the Vicar of Quinton to President Mayhew of Magdalen College is printed in abstract in Hist. MSS. Com., 1881, Vol. VIII, Pt I, p. 263, and in full in W. Denton's "England in the Fifteenth Century," 1888, pp. 318–320.

[4] Armstrong, Treatise concerning the Staple, ed. Pauli, p. 26.

[5] "Certayne Causes, 1550–1553," in "Four Supplications," E. E. T. S.: E. S. Vol. XIII, p. 96.

[6] [John Hales] Discourse of the Common Weal, ed. Elizabeth Lamond, 1893, p. 15.

[7] Henry Halhead, Inclosure Thrown Open, 1650.

To this view that the characteristic inclosures of the fifteenth to the seventeenth centuries were largely confined to the Midlands, there is the apparent objection that a number of early authorities may be cited as mentioning inclosed countries lying outside the central region. Professor Ashley on this evidence has marked upon his maps, as wholly or mainly inclosed in the fifteenth and sixteenth centuries, Suffolk, Kent, most of Essex and Hertfordshire in the east, and most of Worcestershire with the northwestern part of Warwickshire in the west of England. But if, when the chapter on the Agrarian Revolution was written, he could have had the benefit of Professor Meitzen's suggestions,[1] he would have hesitated, we may suspect, before classing these old inclosed districts among the inclosures of this period. Though the questions raised by Meitzen's researches demand in their application to England further and careful investigation, it seems clear that a distinction must be made between two quite differing forms of settlement and agricultural practice, one with the "nucleated village" and the open fields, the other with its scattered farms and inclosed fields. In some sections the "old inclosures" may go back to an original settlement long before the Conquest, in others both settlement and inclosures may belong to a later period of reclamation from the forest and of inner colonization, — a chapter of English economic history still to be written. In any case, associated as they are with their own distinctive agricultural methods, they are not to be confused with the depopulating inclosures of open-field land characteristic of the later movement we are here dealing with. A contemporary writer excepts from his condemnation of inclosures "Essex, Hertfordshire, Devonshire, and such like Woodland Countries," where "euerie lordship is charitably diuided amongst the Tenants, and tillage also in most of their Closes is maintained, and Townes nothing dispeopled."[2] We may name from early evidence others of these at any rate in part old-inclosed "Woodland Countries." Suffolk, Kent, Sussex, Dorsetshire,

[1] A. Meitzen, Siedelung und Agrarwesen, 1895, Vol. II, p. 118, and Anlage, 66 a, in the accompanying Atlas.

[2] Francis Trigge, The Humble Petition, 1607, in Dedication.

Somersetshire, might be mentioned,[1] while large portions of the west and north of England seem likewise to have known little or nothing of the open fields. Within the Midland open-field district itself there seem to have been areas of wooded, thick-hedged country with at most but sparse, outlying open-field villages. Such, for instance, in Buckinghamshire is the Chiltern region, contrasted by Leland with the "champaine" Vale of Aylesbury, or, in northwestern Warwickshire, the "Arden," on the right hand of the Avon, noted by the same observer.[2] We may in passing mention East and West Gloucestershire as illustrating on the modern map the contrast between the two distinctive forms of settlement. The old-inclosed woodland countries may safely be neglected in a consideration of the inclosures of the fifteenth and sixteenth centuries.

A third general conclusion to be drawn from a study of the official inquisitions is that even in the Midland counties, in the region where the set of the current towards agrarian innovation was at its strongest, it had only succeeded in cutting numerous but narrow and scattered channels through the sand-bars of custom and prejudice. It would be indeed somewhat surprising, were we not already guarded against contemporary asseveration, to discover in the midst of such wholesale complaint so comparatively few wholesale clearances. Armstrong, in the second quarter of the sixteenth century, talks of the destruction of 400 or 500 Midland villages within sixty years, but a tenth of his estimate would undoubtedly be nearer the mark. Search through the two official inquiries for the Midlands, covering together over sixty years,

[1] See Fitzherbert, Surveying (1523), edition of 1539, chap. xli, for Essex; Hales' Discourse (1549), edited by Lamond, p. 49, for "Essex, Kent, Devonshire, and such"; Tusser, edition of Dialect Soc., p. 141, for Suffolk and Essex; the Considerations of 1607 (printed in Cunningham, Growth of English Industry, Vol. II, pp. 702–703), for "Essex, Somerset, Devon, etc."; Blith, The English Improver, edition of 1640, p. 40, for Hertfordshire, Essex, Kent, Surrey, and Sussex; while in the edition of 1563 (p. 83) he adds Berkshire, Hampshire, Wiltshire, Somersetshire, and mentions among the "Woodlands" the "Westerne parts of Warwickshire and the Northerne parts of Worcestershire, Staffordshire, Shropshire, Derbyshire, Yorkshire, and all the countries thereabouts."

[2] Leland, Itinerary, edited by Hearne, iv ff. 192 a, 166 a; viii f. 74 b.

reveals but around two dozen villages or hamlets which were practically all inclosed and emptied of their inhabitants, the full half of them in Northamptonshire. But even here, the incloser's county par excellence, a competent local observer remarks, in 1712, that "the main body of the county is champaign (open-field), . . . the inclosures lie dispersedly up and down in the county. In some few places are four or five lordships lying altogether enclosed, . . . yet far the greatest part of the county is still open."[1] The inquisitions show that, in the main, the inclosures are of small holdings, ranging on the average for the Midland counties from 30 to 60 acres; and, were it not that the statute of 1490 took no account of decay associated with less than 20 acres, the average entry in the inquisitions would doubtless be lower. Apparently a piecemeal inclosure had long been going on, which, so far as size is concerned, was not very dissimilar to that which left its traces on the fields of Norfolk at the close of the eighteenth century.[2] The figures show that in 68.5 per cent of the 1090 villages reported on in 1517 the acreage affected was less than 100 acres, while the Midland inquiry of 1607 gives 48 per cent of places with less than 100 acres.[3]

Despite the inadequacies of our statistical basis, its general teaching harmonizes with that resulting from a study of the great era of inclosures in the eighteenth century, and is not inconsistent with the little precise information that can be winnowed from the chaff of contemporary comment. It may be stated, to resume the argument briefly, that the specific inclosure movement of the fifteenth and sixteenth centuries, the depopulating inclosure of open fields with a view to the greater profit of grass-farming, had

[1] John Morton, The Natural History of Northamptonshire, 1712, pp. 13, 15.

[2] Marshall, Rural Economy of Norfolk, 1787, Vol. I, pp. 8, 9. "Wherever a person can get four or five acres together [in the open field], he plants a white thorn hedge around it" (Kent, Agricultural Survey of Norfolk, 1794, p. 22).

[3] Inquisitions	Total Number of Places	Acreage Affected						
		1–99	100–199	200–299	300–399	400–499	500–999	Over 1000
1517–1519	1090	747	198	79	33	17	15	1
1607	393	188	87	62	21	11	17	7

not by any means the magnitude often ascribed to it; that it was, in other words, little more than the feeble beginning of an "agrarian revolution"; that, limited in amount, it was also circumscribed in area, being largely confined to the central districts of England, and even here was of a piecemeal character, so that, after more than two and a half centuries, inclosures were only lying "dispersedly up and down."

But this sketch of the specific inclosing movement of the period does not touch all the features of the agrarian change. Besides the engrossing and consolidation of farms and the increase in rents and copyhold fines, which could and did take place without inclosure, there was still another type of inclosure, that of the common waste, which should be mentioned. Brinklow associated the two forms when he wrote that the "lordes flocks eate vp the corne, medows, heathes, and all together,"[1] and that this was not all exaggeration is plain from Fitzherbert's more sober statement.[2] While playing a minor rôle in the literature and legislation of the period, it seems, if number of lawsuits are any criterion, that inclosures of common (as distinguished from common fields) caused more bickering and strife than the better known and more dramatic attack on the open fields. Of the cases of oppressive inclosure complained of to the Privy Council during the sixteenth century, almost all relate to the inclosure of common pasture or waste; and the records of the law courts show constant disputes over common rights in all parts of the country, bearing witness at once to the tendency to landlord encroachment and to the often successful force of popular resistance. These contests are, of course, not peculiar to the open-field districts, but were found in all parts of England; nor were they especially characteristic of this particular period. They form, rather, one phase of the long history of the approvement of the wastes which stretches back beyond the statute of Merton (1236), and, like the later movement for inclosure of the common fields, finds its culmination after 1760. This gradual and steady nibbling from the common wastes, going on for a longer time and over a wider area, was, however,

[1] H. Brinklow, Complaynt (ca. 1542), E. E. T. S.: E. S. Vol. XXII, p. 38.
[2] Fitzherbert, Surveying, edition of 1539, c. 8.

accompanied for the most part by no such immediate and striking changes. Even within the boundaries of the open-field country it would tend rather to cramp than to destroy the three-field husbandry. But it contributed its share to the social discomfort, and increased the force of the reaction against inclosure in general.

If the extent of these inclosures and their social effects be reduced to something like the real proportions, sympathy with the inevitable pain of an era of social and economic transition need not be thereby diminished. We may still appreciate the sufferings, mental, as well as physical, of those who, rooted in tradition, bound by custom, abhorring innovation, were nevertheless pushed onward amidst vociferous complaint by irresistible and to them incomprehensible forces. They ascribed their ills to many causes, but below the surface we may discern the silent yet far-reaching effects of the general uplifting in western Europe not only of new price levels, but of new culture levels.

YEOMAN FARMING IN OXFORDSHIRE FROM THE SIXTEENTH CENTURY TO THE NINETEENTH

By H. L. Gray

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* * * * * * * * * *

RECENT discussion about the decline of independent farming in England begins with the appearance of Rae's paper in 1883. In it he maintains "that up till the close of the eighteenth century no really serious breach had as yet been made in the ranks of the yeomanry, if indeed their strength had not positively risen." From 1815, however, "they have steadily declined, and the succeeding sixty years . . . have been sufficient to compass their general, and, except in one or two individual spots, their complete disappearance from the face of England." The principal reason for this calamity Rae finds in the decline of prices and prosperity after the close of the French war. Men who had invested in land when the prices of provisions rose in the early years of the war, and others who had made improvements in their holdings, or had lived somewhat extravagantly during prosperous times, saw themselves unable to meet their mortgages in the subsequent period of depression and low prices. The passing of domestic industry and the loss of the carrying trade contributed to the same end. Rae's propositions have been recently elaborated by H. C. Taylor in a careful study of the printed material.

In opposition to this "myth that the end of last century witnessed the heyday of the since vanished yeomanry," J. D. Rogers points out the data used by Rae and Taylor refer in part to life-lessees and concludes that "farmer-owners . . . have not played a great part in our history, and have only been important

when inextricably intermingled with the great body of tenant farmers or voters." Accepting and emphasizing the first part of this criticism, Hermann Levy attributes the decline of independent farming not to the low price of grain after 1813 but to its high price from 1760 to 1813. The small farmer, then producing live stock for the market rather than grain, derived no advantage from the advancing price of the latter, — was, indeed, at times forced to buy. Levy's propositions have in turn been subjected to severe criticism by Hasbach. His discussion of the independent farmer in "Die englischen Landarbeiter" has been greatly extended in the revised English translation of that work and still more in an article in the *Archiv für Sozialwissenschaft.* In the main he agrees with Rae, criticising chiefly the latter's interpretation of the term "yeoman" and his neglect of enclosures. For Hasbach the yeoman class includes large as well as small farmers. He believes that yeomen were still numerous at the close of the eighteenth century; Rae makes "a valuable point in ascribing their downfall to the period after 1815." As the more prosperous of them, however, passed into the ranks of the gentry from the sixteenth century onwards, the upper layer of the yeomanry vanished. The lower layer, differing little from cottagers, suffered like them from the enclosures of the eighteenth century. Arnold Toynbee, somewhat earlier, had concluded that "the process of the disappearance (of the small freeholder) has been continuous from about 1700 to the present day (but) . . . it was not until about 1760 that the process of extinction became rapid." Mantoux in his study of the Industrial Revolution thinks that the yeomanry was already doomed before 1780, when the new industry gave the final blow. "Son sort . . . n' a été qu'un episode remarquable d'un drame plus vaste. . . ." This drama was the enclosure movement which reached its height in the second half of the eighteenth century when "le nombre des fermes . . . a beaucoup diminué."

To a great extent the entire discussion has hinged upon the county reports to the Board of Agriculture made at the close of the eighteenth century and upon the contemporary writings of William Marshall and Arthur Young. All have much to say about the surviving yeomanry. Difficulties arise, however, from the

vague numerical statements made and from the loose use of the term "yeoman." The only numerical pronouncement upon which all observers could agree was that yeomen had disappeared in Norfolk and had fallen off in Lancashire and Cheshire. Elsewhere definiteness is attained in ascribing to the yeomanry one-third of the North Riding of Yorkshire, one-third of Berkshire, and one-fifth of the South Holland and one-half of the Fen districts of Lincolnshire. Shropshire is estimated to have three thousand freeholders and copyholders, or, as an earlier writer put it, "an infinite number." Most often, however, the phrase is simply "many" or "a considerable number," an expression which we have no means of gauging. Still more troublesome is the term "yeoman." Originally perhaps limited to forty-shilling freeholders, it had come in the eighteenth century to include at times copyholders and tenant farmers. Since the distinction between tillers of freehold and copyhold land was at this time slight, their confusion need not trouble us. For English social and economic history, however, it is of considerable importance to separate lessees from occupying owners. Precisely because the county reports confuse the two under the term "yeoman," they are likely to be misleading and to endanger conclusions based upon them.

In view of this varying connotation of the word "yeoman," of the vagueness of the statements made about the persistence of the class, and of the somewhat general knowledge upon which such statements must have been based, it may not be amiss to try to get more accurate information regarding independent farming within a limited area. Such a study I have attempted for Oxfordshire, and the results are here presented. The term "yeoman" is retained but is always used to designate an independent or landowning farmer (occupying owner). The data are based upon three groups of documents, hitherto little used, — assessments of the Land Tax, enclosure awards, and manorial surveys.

Very recently Mr. A. H. Johnson has published his Ford Lectures for 1909 on the disappearance of the small landowner. He, for the first time, has used the Land Tax assessments. Those utilized in the present paper are summarized in his last chapter and some from other counties are there added. The conclusion

which he reaches is "that by far the most serious period for the small owner was at the close of the seventeenth and during the first half of the eighteenth century . . . and that the changes since the middle of the eighteenth century have not been nearly so radical as they have been generally supposed to be." This view is supported by the evidence about to be more specifically set forth.

The parochial records of the assessment of the Land Tax seem to have been carefully made from the time of the levy of ship money; a complete and continuous series exists only from about 1785. At this time, too, the returns, for Oxfordshire at least, incorporate an additional item of unusual value. In nearly all cases they begin to state not only the owner of the real property assessed but also its occupier. Thereby it becomes possible to discover which farmers are tilling their own land and which are tenants only. Occupying owners, that is, independent yeoman farmers, stand in clear juxtaposition to non-occupying landlords. The purpose of this paper is to point out to what extent the former existed in Oxfordshire in 1785; to trace their fortunes from 1785 to 1832; to ascertain whether their numbers had decreased since the sixteenth century; to note the effect upon them of such enclosures as occurred between 1785 and 1832; and, lastly, to inquire how far enclosures of an earlier period should be called a cause of their disappearance.

In the use of the Land Tax returns, comparisons are the easier, since the rate of four shillings the pound remained unchanged from 1775 to 1789, and in the latter year Pitt made it unchangeable. Certain limitations and sources of possible error, however, have to be kept in mind. In the first place boroughs and market towns of any size have to be excluded, the assessment there relating largely to houses, shops, and inns. In a few cases lessees for long terms of years are substituted for owners. Often a careless use of the term or sign "ditto" causes confusion, which can be cleared up only by examining the writer's usage and comparing the returns for successive years. Occasionally the distinction between owners and occupiers is not noted until some years after 1785; and again, as certain owners begin to redeem their assessment after 1798, the same discrimination is neglected relative

to sums redeemed. Accuracy in the exact size of holdings cannot, of course, be attained. The returns, concerned only with pounds and shillings, show rather the relative value of estates in each parish. A comparison with contemporary enclosure awards, however, shows the assessment to have been at the rate of from one shilling and sixpence to two shillings per acre. Small assessments present a considerable difficulty. Later returns show that cottages and houses paid from one to five shillings, while some paid more. The line between landless cottagers and cottagers having an acre or two of land is so vacillating that it must be arbitrarily fixed. In the present study only occupying owners who pay six shillings or more are considered. Cottagers paying less, who may have had an acre or two of land, will be pretty well counterbalanced by the unavoidable inclusion of some landless dwellings which pay six shillings or more. Another troublesome entry is the home farm of the country squire. Often it is so large an item in the parish that to treat it as a yeoman's farm would give misleading results. Hence another arbitrary line has been drawn at twenty pounds, representing about three hundred acres. Any one paying more than this, even though an occupying owner, is excluded from the group presently to be considered. Similarly excluded is the assessment of tithes; the owner and occupier naturally appear as the same person. Again, when certain rates due from woodland are charged against a so-called "occupying owner," usually a nobleman or a gentleman, they are not, when discoverable, admitted among the holdings of yeoman farmers. Lastly, estates which for the moment are in the hands of the owner in default of a tenant are classed as landlords' estates. In short, the term "occupying owner" or "yeoman farmer" is here used to designate only those who paid in 1785 an annual tax of from six shillings to twenty pounds, representing estates of from about one acre to about three hundred acres. Consideration is first given to the size and distribution of this class, as the most salient feature in the Oxfordshire returns of 1785.

The results of an examination of the assessments in the several townships are summarized in the table on page 188. Townships are grouped according to the percentage of the total quota paid in

Of the Township Quota Occupying Owners pay in 1785	Number of Townships	Total Quotas of the Townships	Paid by Occupying Owners		Number of Occupying Owners	Number of Townships in which				Number of Townships Unenclosed in 1755
			Amount	Per cent		Three-fourths of the real property is owned by one man	Three-fourths of the real property is owned by two to three men	One-half of the real property is owned by two to three men	Property is much subdivided	
		£ s.	£ s.							
Group A, more than 20 per cent.	48	5560 7	1525 7	27.4	591	0	0	8	40	48
Group B, from 10 to 20 per cent.	54	6500 7	886 15	13.6	393	1	6	33	14	41
Group C, from 5 to 10 per cent .	36	3933 2	268 6	6.8	173	2	9	18	7	26
Group D, less than 5 per cent. .	68	7798 11	183 8	2.4	175	17	29	16	6	35
Group E, nothing (no occupying owners)	90	7833 0	0	0	0	64	26	0	0	19
Total	296	31,625 7	2863 16	9.05	1332	84	70	75	67	169

each by occupying owners, and the groups for convenience are designated A, B, C, D, E.

From this summary it appears that only 9 per cent of the county's rural real estate was in the hands of the independent farmer in 1785. But it also appears that the five groups fall into two well-marked divisions. In groups C, D, and E, comprising about two-thirds of the townships, there are only three hundred and forty-three occupying owners, or less than two per township. They pay but 2.3 per cent of the tax and presumably own only this percentage of the land. The remaining 97.7 per cent is to be attributed to the non-occupying owner — to the landlord. In the other division, formed of groups A and B and comprising one hundred and two townships, the occupying owner pays 20 per cent of the tax and is to this extent a substantial factor in the community. We should not be far wrong in picturing two-thirds of rural Oxfordshire in 1785 as given over almost entirely to the landlord, while the other third has one-fifth of its population yeoman farmers.

It will be remembered that Oxfordshire rises in the northwest into the Cotswold Hills and in the southeast into the Chilterns. The intervening surface comprises the low-lying valleys of the Thames, the Cherwell, and the Thame. A cross-section of the county from northwest to southeast would thus have the appearance of the profile of a saddle, with Oxford at the center. In the Chiltern region there are fewest yeomen townships. These parishes were brought under cultivation largely from the forest state, as becomes clear from the position and extent of their open fields. The more fertile and more favorably situated parts of the river valleys also are in landlord hands. In three spots only are independent farmers numerous, and these three are the most retired in the county. One is the triangle formed with the northern line of the Chilterns as its base and the two highways from Oxford to London as its sides. It is a lonely plain, in places not very fertile, still untraversed by a railway and in marked contrast with the attractive southern slopes of the same hills. The open fields of this region were among the last in the county to be enclosed. A second isolated spot is that about Otmoor, some distance removed from the Oxford-Bicester highway. But the largest of

the three districts is the northern end of the county, rising from Banbury westward to the spurs of the Cotswolds. It is the divide between the valleys of the Thames, the Severn, and the Ouse — the very heart of England. Before the days of canals and railways its communication with the outer world must have been slow if not difficult. Yet the soil is the best in the county, a much-praised red loam. Before the Civil War the region was a Puritan stronghold, while today certain parishes are peopled largely by Quakers. Perhaps these characteristics have made for the vigor of yeoman farming.

To this survey of the status of the independent farmer in 1785 a glance at his fate for the next two generations is the natural sequence. It is the period of the Napoleonic wars and their aftermath. Though the year 1832 is a political rather than an economic landmark, it is here chosen, since at that date the reaction from the war period had had time to make itself felt. Returns for 1804 show the state of affairs during the crisis. The number of occupying owners and their assessment at each of the three dates is indicated in the following table:

	1785		1804		1832	
	Land Tax paid by occupying owners	Number of occupying owners	Land Tax paid by occupying owners	Number of occupying owners	Land Tax paid by occupying owners	Number of occupying owners
	£ s.		£ s.		£ s.	
Group A . . .	1525 7	591	1752 11	646	1672 7	553
Group B . . .	886 15	393	1148 15	499	1176 4	387
Group C . . .	268 6	173	318 16	188	381 2	156
Group D . . .	183 8	175	298 14	185	427 4	146
Group E . . .			60 16	20	95 3	20
Total	2863 16	1322	3579 12	1538	3752 0	1262

While in 1785 occupying owners paid 9.05 per cent of the total assessment of the county, their contribution in 1804 had become 11.3 per cent and in 1832, 11.9 per cent. A very marked increase appears in the amount of land cultivated by owners during the early years of the French wars; and this is true for each group of townships. The total amount even continued to increase

until 1832, though too much should not be made of this. The increase between 1804 and 1832 is largely in group decrease. It is perhaps safest to think of the amount as remaining nearly stationary during these years.

The situation is somewhat different when we turn from the amount of land held by occupying owners to the number of the latter. From 1785 to 1804 the tendency is as before. The total increases from 1322 at the former date to 1538 at the latter, each group showing an advance. From 1804 to 1832, however, the total drops to 1262, a figure even smaller than that for 1785. Hence the general conclusion for the county must be that during the first nineteen years of our period there was a marked increase both in the number of occupying owners and in their holdings, but that during the last twenty-eight years the occupying owners decreased in number though the area tilled by them did not.

The interpretation of these facts is, of course, that there was a return to the soil attendant upon the higher price of food products during the French wars. Men bought land and tilled it. In the period of comparative agricultural depression which followed, this land was sold again, but not to the landlord. It came into the hands of the more stable of the independent farmers, who thus increased their holdings. The period made for the prosperity of this class, if not for its numerical increase. It was not a time of the growth of large estates at the expense of the occupying owner. The latter, once getting control of the land, did not relinquish it, unless to a fellow occupier.

Large estates did develop in several places, but almost always through acquisitions made from other non-occupying owners. The list subjoined indicates those townships in the county in which the largest estate shows increased assessment between 1785 and 1832. In all other townships the largest estate remained unchanged or declined in value. Though these large estates increased their tax to the extent of £290, not more than £40 of this could have come from occupied estates purchased from yeomen.

For an accurate conception as to whether the tenacity of the yeoman has continued from 1832 to the present, an examination of the Land Tax returns at intervals during the period would be

essential. This I have not been able to make. If a parliamentary report of 1896 may be trusted, the amount of land then in farms of from 1 to 300 acres, tilled by their owners, was only 8.37 per cent of the county's area. If, however, farms of 300 to 500 acres be included, the per cent rises to 12.9 — almost exactly what it was in 1832. At best, occupying owners seem not to have extended their holdings during three-fourths of the nineteenth century, and may have decreased them during that period.

Turning now to the period before 1785, we face a problem of tendencies. The evidence is by no means so complete as one could wish, yet something we have. In the second half of the sixteenth century and during the opening years of the seventeenth it became the fashion to make surveys or field books of manors and parishes. In their most complete form these surveys locate all open-field strips and all enclosures within the parish, indicating the tenure by which each is held and its tenant, not neglecting a description of the demesne and sometimes including the customs of the manor. Though often abridged, summarized, or incomplete, they are of great value for an intimate acquaintance with sixteenth-century agrarian conditions. For our immediate purpose they furnish the number and holdings of freeholders and copyholders in twenty-six Oxfordshire townships.

In about half of these cases the areas are in acres, in the other half in virgates, the virgate varying in Oxfordshire from 20 to 48 acres. The chief difficulty in the comparison with eighteenth-century data is that the sixteenth-century surveys do not discriminate between occupying and non-occupying owners. The implication seems to be that at least nearly all copyholders are occupiers. In the table on page 193 only such freeholders and copyholders are included as have messuages and are not distinguished by the term "gentleman." All holdings of less than two acres are excluded, as was necessarily done in the returns of 1785. A few non-resident owners may have crept into this computation, but the number cannot be large enough to vitiate seriously the following comparison with the later data.

Both the number of yeoman farmers in the parishes in question and the area of their holdings seem to have decreased by about

Date	Township	Area of Demesne	Number of Free-holders	Area of Freeholds	Number of Copy-holders	Area of Copy-holds	In 1785			
							Number of occupying owners	Estimated area occupied by owners	Tax paid by occupying owners	Total tax paid by township
				Acres		*Acres Virg.*		*Acres*	£ s.	£ s.
5 E. 6	Blackthorn		0	0	26	(816) 34	11	(562)	42 3	125 0
"	Brize Norton	7½ virg. @ 4	2	(@ 18 s. 6 d.)	6	(276) 11½	4	(116)	8 15	176 16
"	Burton *Magna & Parva*		0	0	13	(636) 26½	12	(188)	14 2	117 0
"	Caversham	1047 A.	1	(?)	48	1543	4	(137)	10 6	430 13
"	Charlton on Otmoor	(@ 4)	0	0	20	(348) 14¼	6	(262)	19 12	89 3
"	Cropredy	413 A.	0	0	18	(504) 21	11	(333)	24 19	79 17
"	Carsington	(@ 4)	0	0	6	(192) 8	5	(40)	3 1	163 14
"	Hardwick & Brithampton		0	0	15	(384) 16	9	(274)	20 10	74 18
"	Hook Norton	100 A. + Park + Warren	0	0	23	(792) 33	28	(852)	64 4	230 14
"	Langley	164 A. + Park	2	15	5	130 0	0	0	0	24 14
"	Milton under Wychwood		4	214	7	412 6	6	(46)	3 10	86 14
"	Minster Lovell	528 A.	1	(60) 2½ virg.	14	(672) 28	0	0	0	89 9
"	Ramsden		3	62	4	200	8	(126)	9 9	38 13
"	Shipton under Wychwood	370	5	325	15	912	7	(222)	16 14	98 5
"	Spellsbury	3 virg. *certae terrae*	0	0 (@ 20 d.)	28	(956) 39	3	(66)	4 18	89 5
"	Thrup		1		4	(180) 7½	1	(8)	0 12	51 18
4 Jas. I	Bensington		17	578	1	8	15	(522)	39 3	146 13
"	Bladon	111 A.	1	134	10	589	5	(76)	5 13	71 10
"	Combe Longa	323	6	42	18	369	4	(104)	7 15	93 4
6 Jas. I	Ewelme	317	3	17	18	370	14	(644)	48 8	183 14
4 Jas. I	Handborough	251	7	64	29	735	11	(338)	25 8	137 1
"	Stonesfield		5	54	16	220	5	(60)	4 11	27 10
"	Wootton		4	62	7	464	11	(226)	17 0	178 14
"	Warborough		11	200	13	452	25	(1086)	81 9	205 19
1615	Yarnton	384			11	640	0	0	0	172 14
1650	Ensham	2637	7	142	23	540	20	(460)	34 10	287 6
	Total		80	1909	398	13,340	225	6748		

Date	Township	Area of Demesne	Number of Free-holders	Area of Freeholds	Number of Copy-holders	Area of Copy-holds	In 1785			
							Number of occupying owners	Estimated area occupied by owners	Tax paid by occupying owners	Total tax paid by township
		Acres		*Acres*		*Acres*		*Acres*	£ s.	£ s.
1 E. 6	Froucetter	608	0	0	29	703	8	(80)	6 0	143 17
"	Horton	477	2	84	33	980	12	(506)	38 0	232 2
"	Weston Britt	161	0	0	7	346	1	(5)	0 8	63 0
6 E. 6	Bleddington	(?)	2	2 virg. (48 A.)	18	480	4	(150)	11 6	66 8
"	Charlton Abbots	346	0	0	6	294	0	0	0	32 13
"	Marston Sicca	(*ca.* 380)	2	?	11	491	0	0	0	115 14
"	Welford	(*ca.* 150)	4	(172)	15	403	8	(228)	17 2	186 17
5 E. 6	Longney	*ca.* 275	(?)	(72)	40	(*ca.* 900)		(330)	24 14	120 7
Temp. Eliz.	Combe & Symondshall .	436	4	(?)	8	416		(118)	8 18	72 12
			14	(376)	167	5013	49	(1417)		

one-half between the end of the sixteenth century and the late eighteenth. Of the twenty-six parishes it happens that nine are among those which in 1785 had more than 20 per cent of their areas in the hands of occupying owners. Even so, five of these show a distinct falling off in the number of freeholders and copyholders, together with a decrease of about one-third in the area of freeholds and copyholds. The other four seem not to have changed greatly. The remaining eighteen townships, two-thirds of the total number, have lost more than one-half of their freeholds and copyholds, some being left with none at all. This proportion is not unlike what we have been led to expect from the conditions of 1785. At that time in one-third of the townships of the county the yeomanry constituted about 20 per cent of the population; in the other two-thirds only a little more than 2 per cent. We seem now to have reason for adding that in the latter group it had shrunk to 2 per cent. Putting the matter in its most favorable light and allowing that one-third of the county lost few or none of its independent farmers during the two centuries, we must yet conclude that the remainder lost heavily.

Corroborative evidence is given by nine Gloucestershire townships for which we have data similar to those just adduced. In them the average falling off of copyholders and copyhold acreage was upwards of two-thirds, somewhat greater than that east of the Cotswolds. Something, however, may be due to the uniformly early date of the surveys.

To explain the decline in yeoman farming which thus seems actually to have taken place, enclosure has received its share of attention. Enclosures of the eighteenth and nineteenth centuries have been recently discussed by Hasbach, Mantoux, Slater, and Johnson. All cite and discuss contemporary reports and pamphlets, particularly the county reports to the board of agriculture and the writings of William Marshall and Arthur Young. Hasbach thinks that enclosures were fatal for the smaller farmer ("lesser yeoman") and the cottager. Mantoux, generalizing from a few instances, states that "presque partout, la cloture des open fields et la division des communaux ont eu pour suite la vente d'un grand nombre de propriétés. Slater has chapters on enclosure

as affecting the poor and as resulting in depopulation, but in the latter does not clearly discriminate between owning occupiers and other classes of the rural population. Yet his introduction characterizes the enclosure policy of the eighteenth and nineteenth centuries as one directed toward "the uprooting of peasant proprietors." Johnson cautiously concludes that "directly and indirectly enclosures tended to divorce the poor man from the soil," yet the larger yeoman was benefited, and, in general, "enclosure should be looked upon as a necessary preliminary rather than the true cause of consolidation." Rae and Taylor, discovering no marked decline in yeoman farming until after 1815, attribute the nineteenth-century decadence to causes other than enclosure.

In view of these diverse opinions it may be advisable to reconsider our Oxfordshire parishes in the light of their enclosure history. And the preceding order of inquiry may be retained. What was the effect of enclosure between 1785 and 1832, the years for which our data are most complete? And what may be inferred to have been its effect before 1785?

Between 1785 and 1832 forty-nine townships of the county were enclosed, with results which may be seen in the following schedule:

	Number of Parishes Enclosed	1785		1804		1832	
		Land Tax paid by occupying owners	Number of occupying owners	Land Tax paid by occupying owners	Number of occupying owners	Land Tax paid by occupying owners	Number of occupying owners
		£ s.		£ s.		£ s.	
Group A . .	9	336 9	152	349 14	164	425 16	155
Group B . . .	14	240 0	121	320 13	154	326 13	152
Group C . . .	7	52 15	31	66 0	30	45 15	21
Group D . .	15	28 6	30	47 1	34	47 16	31
Group E . . .	4	0 0	0	10 16	3	12 12	4
Total . .	49	657 10	333	794 4	385	859 12	363

Taken together, these townships seem to have had the same experience as the county at large. The amount of land occupied by the owners increases steadily during the entire period. The number of occupying owners increases until 1804, but declines somewhat before 1832. Turning from the totals to the figures for

individual parishes, we find an occasional deviation from the rule just stated, but seldom one of moment. Distinct loss of occupying owners or of their estates can be discerned in seven townships only. In these, eight independent farmers and occupied farms rated at £27 4s. disappear. Elsewhere, if occupying owners seem to be lost, they have either disposed of their properties at a date distant from that of enclosure or have leased them and thenceforth appear as landlords. The disappearance of eight men and of some three hundred acres in the forty-nine townships which underwent enclosure during the half century in question is of slight consequence in comparison with the marked increase of yeoman farming apparent in the townships taken together.

Before 1785 enclosure had been actively going on during thirty years, but unfortunately our data for determining its effects are by no means so complete or precise as the material just summarized. The only Oxfordshire Land Tax assessments before 1785 are those of a few parishes for the years 1760 and 1761. Nor do these distinguish between occupying and non-occupying owners, as do the later ones. Hence the sole information to be had from comparison of a Land Tax receipt of 1760 and one of 1785 is whether there had been in the interval an engrossing of farms, i.e. the absorption of small estates by large ones. Such information may be extended by an examination of enclosure awards, which likewise do not go the length of discriminating between occupying and non-occupying owners. At best we can merely argue that engrossing may have entailed the loss of some independent farmers, while its absence probably means the maintenance of the *status quo*.

Of the fifty-six Oxfordshire parishes enclosed from 1758 to 1785, the 1760 assessments remain for seven. One of these, Stanton Harcourt, shows no particular engrossing during the period. But the other seven do. Especially in Bladon, Chesterton, and Handborough the Duke of Marlborough is found to have been vigorously making purchases, and in Chesterton his interest is new. In the other three townships the purchasing landlords are different persons, and the one at Heath has not bought extensively.

The meager information from the Land Tax records is somewhat extended by the evidence of the enclosure awards. These are available for forty-seven of the fifty-six parishes. In some of these, allotments made in lieu of newly purchased estates mention the recent purchases. In this way we discover preënclosure purchases in five parishes. In not more than two of them, however, is there any tendency toward forming large estates; and one of these two estates is acquired by the Duke of Marlborough at Black Bourton. Again, by comparing enclosure awards with the Land Tax assessments of 1785 we discover traces of post-enclosure consolidation in three other parishes.

Taken together there are fourteen parishes out of the fifty-six enclosed between 1758 and 1785 which show traces of engrossing of estates either before or after enclosure. But of these cases four are not significant, two others not markedly so, while half of the remainder are directly connected with the Duke of Marlborough. On the other hand, in the awards of thirty-three parishes there is no mention of estates purchased nor is there any evidence of engrossing between the date of enclosure and 1785. What is especially noticeable is that in groups A and B the seventeen parishes which underwent enclosure retained a large yeoman population and show no growth of large estates. We may well surmise that their experience was very like that of parishes enclosed after 1785. Fifteen of the seventeen lie in the northern region about Banbury, the stronghold of the small farmer. In view of all this, our general conclusion regarding enclosure between 1755 and 1785 must be that in the majority of cases, and especially in the north of the county, it was accompanied by no growth of large estates, no consolidation after enclosure, probably not much before it, and little or no disappearance of the independent farmer; but we must add that in certain parishes, especially those in the southwest of the county where the Duke of Marlborough had interests, some estates were bought up, a part of which may have come from independent farmers.

A final and difficult question is the connection between enclosure prior to 1760 and the disappearance of the independent farmer. It may be assumed that enclosure had been taking place for two

and a half centuries. Professor Gay's researches have done much to establish the fact and to determine the continuity and the extent of the movement. Miss Leonard's paper adds some data for the seventeenth century. The year 1760, or at least 1755, marks the period at which a new method of enclosure becomes popular. From 1755 resort to private acts of parliament, occasional hitherto, supplies us, as has become evident, with a full series of acts and awards. Previously enclosure had gone on, as a rule, by private agreement or chancery decree or had been a piecemeal process unauthorized by legal formality. For the moment we are interested in the one hundred and twenty-seven Oxfordshire townships which had become enclosed in one quiet way or another before 1755. . . .

Obviously we have not data sufficient to show decisively whether enclosure before 1755 caused the disappearance of the yeoman. In most cases we do not know when or under what circumstances the parishes were enclosed or when the small holders dropped out. We have only the situation in 1785. Still conjectures can be wrung even from this. If enclosure was the fundamental cause of the disappearance of the yeoman, the parishes in which yeomen are fewest in 1785 should be enclosed and those in which they are most numerous should be open. From this point of view, examine the schedule. Group A exactly fulfils the logical demand. Its parishes have upwards of 20 per cent of yeomen and are all in open field. Group B, however, with 10–20 per cent of yeomen, has managed to get thirteen of its fifty-four parishes enclosed. At the other end of the scale groups D and E, with practically no yeomen, have fifty-four of their hundred and fifty-eight parishes open. It begins to appear that the presence of yeomen does not delay enclosure nor their absence guarantee it.

Some other factor has to be considered, and the engrossing of estates suggests itself. A reëxamination of the groups shows enclosure in far closer relation with this than with the disappearing yeoman. Of the enclosed parishes in Group B, four were probably never in open field, seven have three-fourths of their respective areas in the hands of two or three men, and two have one-half of their areas similarly engrossed. In Group C, too, seven of the ten

enclosed parishes show respectively more than one-half of their areas held by three owners.

Just as in these two groups engrossing in certain parishes has been conducive to enclosure, so in Group D the lack of it has caused delay. The continued existence of open fields in thirty-five townships of this group can scarcely be attributed to the independent farmer, since he owned on the average only $2\frac{1}{2}$ per cent of the soil. The failure to enclose is to be charged rather to a multiplicity of landlords. For in the land tax reports, the twenty-seven townships which were enclosed after 1785 have, except in two or three instances, many non-occupying owners. The evidence of the three groups thus seems to show that engrossing rather than the absence of occupying owners was the normal preliminary to enclosure before 1755.

Group E indicates whether enclosure always followed speedily upon engrossing. Here there are no small farmers and engrossing had gone far. In each of the ninety townships from one to three men own three-fourths of the land, yet nineteen are unenclosed in 1755 and twelve in 1785. Enclosure of five of the twelve is delayed even to the middle of the nineteenth century. Nor is this because in them there are many landlords. In no parish are there more than five or six of any importance, aside from the glebe and tithe interest. Instances like these have at least two counterparts in Group D. Taken together they make clear that enclosure was sometimes delayed, not so much because there were many interests to harmonize as because landlords were indifferent. With their holdings probably not badly scattered, owners were not troubled by inconveniences to their tenants (which perhaps the latter did not feel) and did not care to incur the expense of parliamentary act and award. Such a situation exists today in the parish of Westcote, Gloucestershire, just on the western border of Oxfordshire.

If the foregoing interpretation of later evidence be correct for the period before 1755, there seems ground for believing that the existence of small independent farmers did not always hinder enclosure and that their disappearance did not always facilitate it. Engrossing of small properties was the essential antecedent. If

such chanced to be yeoman farms, engrossing involved the disappearance of the yeomen. But one must inquire what motives led to the engrossing of independent farms rather than construe as a cause of their disappearance what was often actually a result—sometimes long delayed. This paper does not attempt to explain why yeoman holdings vanished before 1755, but simply points out that the invoking of enclosures explains little. The actual order of events appears to be that for certain reasons and by certain means landlords first acquired estates, and then in the course of time got these accumulated properties enclosed.

Engrossing was not the only process antecedent to enclosure during the seventeenth and eighteenth centuries. Parallel with it, usually seen in the townships where ownership was getting to be the attribute of a few, but often appearing elsewhere, was the breakdown of the old field systems. These began to give way to complicated systems which allowed almost as elaborate a rotation of crops as was possible on enclosed lands. Great Tew in northwestern Oxfordshire made changes in 1759, devised a new rotation in 1761, and taking the next natural step before the rotation had once run its course, undertook enclosure in 1767. The remarkable diversity of field systems in use in Oxfordshire in the late eighteenth century marks a transition stage when an eagerness to use land to the best advantage had not yet achieved enclosure. The numerous enclosures of the Banbury region between 1760 and 1785, unattended for the most part by engrossing or the disappearance of the independent farmer, are to be attributed to the influence of these progressive ideas.

Enclosure thus becomes a sign either that the estates of a township have been largely engrossed or that there is impatience with the trammels of the old field systems. Both conditions of course may coexist and hasten the end. Both go back to deeper causes, the working of which caused the independent farmer partly to disappear. Sometimes, to be sure, he disappeared because he stood in the way of the last stage of the process. In a township owned by relatively few men or anxious to get rid of the open-field system, an obstinate yeoman or two may have objected to enclosure and may have been bought out or bullied

out. This is perhaps the closest approach which seventeenth- and eighteenth-century enclosure makes to becoming a cause of the disappearance of the occupying owner. Such cases existed, without doubt. We have found them between 1755 and 1832, but in small numbers, and then due largely to the activity of the Duke of Marlborough between 1760 and 1785. Most of the evidence, on the other hand, seems to indicate that enclosure was the registering of a *fait accompli* and was dependent upon the engrossing of estates and the breakdown of old field systems.

To determine what underlay these last two phenomena and what was their relation to the disappearance of the yeoman farmer, there is need of further investigation. Toynbee and Johnson have given suggestions. Permanent conclusions must probably rest on the rentals, the surveys, the rolls of manorial and central courts during the period in question. The present paper has merely attempted to show for one county what the facts are. For this limited area they seem scarcely to be what most current writing has maintained. There was in Oxfordshire no decline in the area of yeoman farms between 1814 and 1832, as Rae and Taylor would lead us to think, and scarcely any falling off in the number of yeoman farmers from 1785 to 1832. The temporary increase in the ranks of the latter during the period of the French war does not well accord with Levy's contention that misfortune came to them with the advancing price of grain. Enclosure after 1785 did not fatally affect yeomen with holdings of from two acres to three hundred acres, and did not to any great extent during the preceding thirty years. In this respect, the views of Miss Leonard, Hasbach, Mantoux, and Slater do not receive confirmation. Toynbee, in saying that the disappearance of small freeholders has been continuous was better advised than when he added, "it was not until about 1760 that the process of extinction became rapid." Mr. Johnson, alone, reasoning from the Land Tax returns and other data, reaches conclusions about the period when the yeomanry disappeared more in accord with those which seem to hold for Oxfordshire. Summarily stated, these are that the marked decline in yeoman farming took place between the

sixteenth century and 1760 rather than after that period; that enclosure of the open fields after 1760 was not disastrous to occupying owners who had more than one acre of land; and that earlier enclosure should probably, in the main, be looked upon not as a cause but as a result of the disappearance of small farms.

THE DECLINE OF LANDOWNING FARMERS IN ENGLAND

By Henry Charles Taylor, Ph.D.

(From the Bulletin of the University of Wisconsin, June, 1904)

[This selection begins with Chapter IV of this important study by Professor Henry C. Taylor. The preceding chapters had described the conditions of land tenure in England at the close of the seventeenth century and the changes, amounting almost to a revolution, which came about in the eighteenth century, especially the gradual displacement of the yeomen by the gentlemen farmers. — Ed.]

THE AGRICULTURAL DEPRESSION FROM 1820 TO 1836, AND ITS INFLUENCE UPON LANDOWNERSHIP

THE first twelve years of the nineteenth century were extremely prosperous times for English agriculture, and until 1820 prices had not been reduced very materially;[1] but from 1820 to 1836 prices were comparatively low. This era of low prices, following the great prosperity of war times, wrought disaster among all classes in England who were dependent upon agriculture for an income. Tooke attributes the high prices of the one period and the low prices of the other to the war, the currency, and the variations of the seasons, along with a rapidly growing population engaged in manufactures and commerce. The war made the importation of food dangerous and expensive; and a somewhat debased currency, and bad seasons at the close of the century, with an increasing demand for food, resulted in enormously high prices. On the other hand, peace, a restored currency and a series of excellent crops after 1819 resulted in a great reduction in prices.

The purpose of this chapter is to determine the influence of this agricultural depression upon the landowning farmers of England.

We are fortunate in having the minutes of the evidence given before the Select Committee on Agriculture, during this period,

[1] Tooke, History of Prices, Vol. I, p. 5. Also, The Report of the Select Committee on Agriculture, for the year 1833, p. xii, from which the following table is taken:

THE PRICE OF WHEAT, PER QUARTER, FROM 1797 TO 1833

Annual Average of the Kingdom		5-Year Averages	Highest and Lowest Prices in the 5 Years	
Years	Average		Date of highest price	Date of lowest price
	s. d.	s. d.		
1797	52 2			
1798	50 4			
1799	66 11	79 1	21, March, 1801	25, March, 1797
1800	110 5		154s. 1d.	47s. 11d.
1801	115 11			
1802	67 9			
1803	57 1			
1804	60 5	69 9	17, August, 1805	3, March, 1804
1805	87 1		97s. 8d.	49s.
1806	76 9			
1807	73 1			
1808	78 11			
1809	94 5	88 5	9, June, 1810	14, November, 1807
1810	103 3		114s. 10d.	65s. 7d.
1811	92 5			
1812	122 8			
1813	106 6			
1814	72 1	88 2	8, August, 1812	13, January, 1816
1815	63 8		150s. 3d.	53s. 1d.
1816	76 2			
1817	94			
1818	83 8			
1819	72 3	74	28, June, 1817	29, December, 1821
1820	65 10		112s. 7d.	46s. 2d.
1821	54 5			
1822	43 3			
1823	51 9			
1824	62	56 1	25, June, 1825	26, October, 1822
1825	66 6		69s. 5d.	38s. 1d.
1826	56 11			
1827	56 9			
1828	60 5			
1829	66 3			
1830	64 3			
1831	66 4	61 8	14, November, 1828	19, October, 1832
1832	58 8		76s. 7d.	51s. 3d.
1833	53 1			

which evidence gives a clear account of the effect of the depression in this respect.

There still existed large numbers of landowning farmers in the various parts of England in 1833.[1] Many of these men held estates which had been handed down from father to son for many generations,[2] while large numbers had purchased the land they occupied.[3] But these yeomen farmers were hard pressed and many had sold their land before 1833. When we go carefully through the minutes of evidence given before the committee we are especially impressed with the rapid decrease in the number of landowning farmers which had taken place after the war and before 1833. In Cumberland and Westmoreland the number had "considerably diminished."[4] Up to the war, properties had continued long in the same families,[5] but in 1833, Mr. Blamire said he believed that since 1815 a greater change had taken place in the proprietorship of the small farms than in any antecedent period of much longer duration.[6] In 1837, Blamire was again before the committee, and says: "The condition (of the landowning farmers in Cumberland) is generally speaking most pitiable. At the present moment they are as a body, in fact, ceasing to exist at all."[7] Mr. Merry, the owner and occupier of a three-hundred-acre farm in the North Riding of Yorkshire, stated that in the different dales in the district where he lived the farmers had nearly all been "ancient freeholders"; but the number of such farmers had been "regularly lessening for ten years," during which time they had been reduced about a seventh.[8] From Mr. W. Simpson we learn that the landowning farmers were "nearly all gone" near Doncaster, Yorkshire.[9] In Nottinghamshire there were "comparatively very few remaining."[10] In Leicestershire, Northumberland, and the Midland counties, generally, small

[1] Parliamentary Papers, 1833, Vol. V, questions 6695, 2346, 5819, 5820, 412, 413, 414, 415, 8474, 1691, 2413, 2196, 2202, 7375, 6405, 9486, 8823, 1262, 9196.

[2] *Ibid.*, 1702, 6061, 416, 1696, 2420, 9930.

[3] *Ibid.*, questions 3105, 3106, 12, 216, 7902, 5820, 416, 532, 2197, 9928, 4862–4866; *ibid.*, 1836, Vol. VIII, questions 1192, 1268–1269.

[4] *Ibid.*, 1833, Vol. V, question 6697.

[5] *Ibid.*, question 6958.

[6] *Ibid.*, question 6701.

[7] *Ibid.*, 1837, Vol. V, question 5107.

[8] *Ibid.*, 1833, Vol. V, questions 2439, 2533.

[9] *Ibid.*, question 3105.

[10] *Ibid.*, S. Wooley, questions 12, 216.

proprietors farming their own land were numerous, but "a great many of them" had been ruined.[1] In Shropshire and in Cheshire the number of "small landed proprietors" had "greatly diminished, . . . since the year 1800."[2] In Herefordshire there were still a great many yeomen, but fewer than twenty years earlier.[3] In Worcestershire a good many freeholders, who farmed their own lands, had sold out.[4] In Kent, near Rochester, no great number had gone to the wall, but they were poor, many of them living little better than workingmen.[5] Such farmers were yet numerous in Hampshire and West Sussex, but many had been compelled to sell their estates,[6] and those who remained were "much reduced in point of circumstances." In Wiltshire the number of landowning farmers had diminished "most materially" within the last fifteen years.[7] In Somersetshire land had been changing hands a great deal since the war, and the number of farmers who bought land was not so great as the number of those who had sold.[8] It was the custom there for the landlords to "run out" the life leases and not make any new ones.[9] Thus all the evidence points to the conclusion that an unusually rapid decline of the yeomanry had taken place during the period of the agricultural depression which followed the close of the Napoleonic wars. We shall now investigate somewhat in detail the causes of this unusually rapid decline.

Extravagance (living beyond one's income) often leads to bankruptcy in all lines of business, and it would be strange indeed if this were not, occasionally, the cause which compels farmers to sell their estates. From Norden we learn that in 1607 this was sometimes the cause of failure on the part of landowning farmers in England.[10] In 1833, a great many of the yeomen of Cheshire were living beyond their means. During the period of high prices they had accustomed themselves to a standard of living which they were unable to maintain after prices had fallen, without

[1] Parliamentary Papers, Buckley, questions 8574, 8579, 8581, 8587.
[2] *Ibid.*, Lee, questions 5825, 6158.
[3] *Ibid.*, questions 8475.
[4] *Ibid.*, question 1697.
[5] *Ibid.*, questions 6405–6413.
[6] Surveyors' Dialogue, Edition of 1618, pp. 81 *et seq.*
[7] *Ibid.*, questions 9923, 9926.
[8] *Ibid.*, question 1262.
[9] *Ibid.*, questions 9208–9209.
[10] *Ibid.*, questions 4970–4974.

gradually consuming their estates. Lee says of this class, "Their property is nearly gone."[1] There is a suggestion that a change of this kind in the habits of the yeomen farmers may have been the occasion of forced sales of land in Worcestershire[2] and in Somersetshire.[3]

But while extravagance may at times have been the cause of failure, the yeomen as a class were industrious and frugal.[4] Speaking of the yeomanry of Cumberland, Blamire says they "are quite as frugal as the tenantry and often more so, and their situation is often worse. . . . They equally lodge their laborers in their own houses, and dine at the same table with them."[5] Having to give up their estates was "by no means the effect of improvidence on their part."[6] Mr. W. Thurnall said that in Cambridgeshire the yeomen were very economical and always hard-working men.[7] "There is not a more industrious man in the three counties," says J. B. Turner, "than a man in Herefordshire whose estate has been sold under bankruptcy."[8]

It was not, as a rule, lack of frugality and industry which ruined so many of the yeomanry during this period of depression; it was primarily the fall in prices at a time when indebtedness was very prevalent with this class.[9] This indebtedness was sometimes incurred for the purpose of purchasing land, sometimes for improvements, often to provide for the younger members of the family, and, occasionally, to cover general living expenses.

Mr. W. Simpson told the committee of 1833 that the yeomanry near Doncaster were "many of them bankrupts." "Farmers who, having four or five thousand pounds, bought farms twenty-five or thirty years ago, borrowing part of the purchase money, have been obliged to sell, and they have nothing left."[10] In Nottinghamshire "a great number bought land at high prices, and having

[1] Parliamentary Papers, 1833, Vol. V, questions 5816–5817.
[2] *Ibid.*, question 1700.
[3] *Ibid.*, question 9206.
[4] *Ibid.*, questions 1704, 8585.
[5] *Ibid.*, questions 6705–6706.
[6] *Ibid.*, 1837, Vol. V, question 5111.
[7] *Ibid.*, 1836, Vol. VIII, question 2423.
[8] *Ibid.*, 1833, Vol. V, question 8477.
[9] *Ibid.*, questions 6707 *et seq.*, 2346, 6063, 532, 598, 1701, 4401, 4402, 9935, 9206; *ibid.*, 1836, Vol. VIII, question 11310; *ibid.*, 1837, Vol. V, question 5108.
[10] *Ibid.*, 1833, Vol. V, questions 3102–3108.

mortgaged their farms for more than their value at the reduced prices, they have been almost universally ruined."[1] This class of farmers met with the same misfortune in Lincolnshire.[2] In Cheshire "a great many farmers got a considerable sum of money, and were made to lay it out in land. They purchased land at forty years' purchase, in some instances, and borrowed probably half the money," and soon after, the produce sold for so much less than formerly that they could not pay the interest on the money they had borrowed and were "obliged to sell their properties for what they could get."[3] In Shropshire, again, farmers paid high prices for land and "borrowed money, as much as they could sell the property for afterwards."[4] These same stories are repeated for Norfolk,[5] Hampshire,[6] Somersetshire,[7] Berkshire and Buckinghamshire.[8]

Improvements do not appear to have been very generally the occasion of indebtedness, but in some instances the witnesses before the select committee gave this as an important cause.[9]

The provision for younger children, or the paying off of the other heirs when one member of the family took the estate, was often the occasion of heavy indebtness. In Cumberland the "statesmen" had large families and "from a miscalculation of their real situation" they left their children "larger fortunes than they ought to have done," and saddled the oldest son with the payment of a sum of money which it was impossible for him to

[1] Parliamentary Papers, questions 12,216, 12,219.
[2] *Ibid.*, question 7903.
[3] *Ibid.*, question 5820.
[4] *Ibid.*, question 532.
[5] *Ibid.*, question 2197.
[6] *Ibid.*, question 9928.
[7] *Ibid.*, questions 4862–4866.
[8] *Ibid.*, 1836, Vol. VIII, questions 1192, 1268.
[9] *Ibid.*, 1833, Vol. V. Commencing with 5816, Lee, Cheshire, the minutes read: "If a yeoman, tempted by high prices of the war, had borrowed money to improve his little property, what would be the condition of that man with the prices falling, the debt remaining and his own habits remaining the same?" The witness replies, "Entire ruin." Again, with Buckley from the Midland counties as witness, the minutes, 8582 *et seq.*, read as follows: "From your own knowledge, were not many of these small proprietors tempted during the war to borrow money to improve their lands? No doubt about that. . . . Those parties, without any fault of their own, have been by this debt, contracted for the improvement of their estates, worked out of their estates? Completely so, without the least fault of their own. . . . I know many who have been . . . ruined [in this way]."

pay.[1,2] This is given as an important cause of indebtedness in Nottinghamshire,[3] Somersetshire,[4] Berkshire and Buckinghamshire.[5]

Thus it would seem that in 1833 these small estates were very generally encumbered. The indebtedness had been incurred during the period of high prices, and when prices fell the debt was often equal to if not greater than the value of the land. The whole net product would not, in many cases, pay the interest. Where this did not force the yeomen to give up their estates at once, the land usually came into the market at the death of the owner, as no member of the family cared, as a rule, to take up the burden of mortgaged ownership which had come to be looked upon as less desirable than tenancy.[6] This fall of prices at a time when mortgages were very prevalent was the immediate cause of the rapid decline in landownership on the part of farmers during the twenties, thirties and forties of the nineteenth century.

When this land came upon the market it was usually purchased by greater landlords, merchants or manufacturers,[7] who

[1] This system seems comparable to Anerbrecht in Germany.

[2] Parliamentary Papers, 1833, Vol. V, question 1704; *ibid.*, 1837, Vol. V, question 5107.

[3] *Ibid.*, 1833, Vol. V, questions 12,216–12,219.

[4] *Ibid.*, question 9198.

[5] *Ibid.*, 1836, Vol. VIII, question 1192 *et seq.*

[6] It is a common saying in England that "the lendlord is worse than the landlord."

[7] Parliamentary Papers, 1833, Vol. V, question 6699: "As these small estates (in the northern counties) are brought to market do small proprietors step in and buy them, or are they absorbed into large properties? Frequently absorbed into large properties, but occasionally bought by men who have realized money in trade or in large farms, and who are withdrawing their capital and . . . and investing it in the purchase of landed property." In Kent, question 6412, these small estates are "generally bought by some one who has an estate adjoining."

Question 2348: "As those small proprietors (in the North Riding of Yorkshire) have sold out, who have become the purchasers? In some measure large proprietors that were adjoining, but chiefly tradesmen and shipowners from Scarborough. . . . There is none of it sold to ancient freeholders; it has changed hands completely, and gone to people who are strangers to the neighborhood." In Cheshire, question 6157, these small properties were "absorbed into larger estates or (purchased) by large manufacturers, who have laid out a good deal of money." Again, in Wiltshire, question 1270, "They are generally bought by gentlemen who have adjoining estates; there are very few estates now purchased by the yeomanry for occupation." Question 7379: "When they (the small freeholds in Kent, Surrey and Essex) have been sold, by whom have they been

very rarely cared to put it upon the market again; and thus the results of this temporary depression have been more permanent than we should expect in a country where landownership on a large scale does not involve so many social advantages, and where systems of primogeniture and entail do not bind the large estates together permanently.

The yeomen farmers were gradually reduced in number,[1] decade after decade, until by the close of the third quarter of the century they were found *only here and there*; and tenancy was the rule.[2] In 1883 John Rae estimated that probably not more

bought? I think by persons in trade in the towns, and so on." Question 9208: "Sometimes the yeomen's estates (in Somersetshire) have been bought by other small proprietors, and sometimes by gentlemen of large landed properties." Question 1703: "Who generally bought those estates (in Worcestershire) so sold? Gentlemen in the neighborhood, principally for investment." Question 1704: "Not small capitalists? No, they have never purchased since those high times in 1811 and 1812." Question 2534: "In former years when a freehold was sold there was another freeholder at hand to purchase the property, but now they have to get a purchaser from . . . some trading place." Question 8580: "A great deal has been bought in the Midland counties by manufacturers; some have been purchased for accommodation by adjoining proprietors, but generally by manufacturers or the great landed proprietors."

[1] Formerly there were many small proprietors in England who formed an important class in the State; they were called yeomen, to distinguish them from the landed gentry, who were called squires. These yeomen have almost disappeared but not by any violent revolution. The change has taken place voluntarily and imperceptibly. They have sold their small properties to become farmers, because they found it more profitable; and most of them have succeeded; those remaining will most likely shortly follow the example. — LAVERGNE, "Rural Economy of England," 1855, pp. 113–114.

[2] The land of the United Kingdom may be said to be now (1878) almost wholly cultivated by tenant farmers. The class of yeomen, or small landowners farming their own land, is found here and there in England, but scarcely at all in Scotland, and now bears but small proportion to the whole. Many of the large landowners retain a farm under their own management for home supplies or for the breeding of selected stock; very few as a matter of business or profit. — JAMES CAIRD, "General View of British Agriculture," *J. R. A. S. E.*, 1878, 2d s., Vol. XIV, Pt. II, p. 32.

A few quotations from the Report of the Royal Commission on Agriculture, as found in the parliamentary papers for the years 1881 and 1882, amplify this statement of Caird's:

"My report," says Mr. Coleman, in speaking of Yorkshire, "is noticeably deficient in any information as to the status and prospect of peasant proprietors, because this class does not exist in Yorkshire; the nearest approach to them is to be found in small freeholders far up the dells, whose position, as far as I could

than 5 per cent of the farmers of England owned the land which they cultivated.[1]

THE RECENT DEPRESSION AND THE PRESENT SITUATION

By 1836 the depression which followed the war had practically ceased and the period from this date until 1875 was, on the whole, an era of great prosperity for English agriculture. The

learn, was in many cases a shade worse than occupiers of small holdings" (Parliamentary Papers, 1881, C.–2778.–II, p. 176).

In his report on Lincolnshire, Mr. Druce says, "There are large numbers . . . of small freeholders in the Isle of Axholme. . . . Here the small freeholders appear to have existed for many years." (Parliamentary Papers, 1881, C.–2778–II, p. 384.) In the eastern-central, and southern, and eastern parts of the county small freeholders are also numerous. They are to be found south of Boston in South Holland, notably in Kirton and some other villages in that locality; again west of Boston to Eildmore Fen, and the West Fen, and north of Boston, running quite up to the Humbre at a little distance from the sea coast, but not on it, there are also large numbers of them (*ibid.*, p. 385).

In Durham many of the small estates had been absorbed by the large ones. "The yeomen are passing away, generally to the great advantage of the community, as the land in the hands of large proprietors is as a rule better managed and far more productive." "I am bound to say," continues Mr. Coleman, "that the inferior and comparatively neglected condition of small freeholds interspersed among some of the larger estates was very apparent, and seemed to indicate that a still further absorption which, in the nature of things, must sooner or later occur, will be beneficial rather than otherwise. Of course in making this statement, I do not say there are not notable exceptions; but what I have stated is the general rule" (*ibid.*, p. 216).

Mr. Doyle, in commenting upon the improvements in agriculture as in part due to the decline of landownership on the part of the farmers, says: "The class of freeholders, such as the 'statesmen' of the north, or the 'grey coats' farther south, are gradually disappearing through force of a law that is more effective than legislation" (*ibid.*, p, 260).

Druce reports on the counties of Essex, Hertford, Huntingdon, Leicester, Norfolk, Northampton, Rutland and Suffolk, and for these counties the common statement runs, "Peasant proprietors are rare and not more prosperous than the tenant farmers," or "The number of peasant proprietors is very small," or "There are hardly any peasant proprietors in the county" (Parliamentary Papers, 1882, C.–3375, pp. 5, 33, 34, 46, 65, 70, 87, 91, 29). "The Fen district of Cambridgeshire is noted as an exception to this rule" (*ibid.*, p. 14). And of Hertfordshire he states, "It seems to me that there were proportionately a larger number of yeomen owners, that is to say, of farms 100 to 500 acres, in this county than in any other in my district" (*ibid.*, p. 34).

[1] John Rae, "Why have the Yeomen Perished?" *Contemporary Review*, October, 1883.

repeal of the corn laws in 1846 wrought no important immediate results. The demand for agricultural produce was so great in England that large quantities had to be supplied from abroad. Some of this necessary supply had to be imported at great expense; hence the prices of home productions were usually very high. Tenant farmers made much money and lived in a very high style; some of them even afforded liveried coachmen. During this period of prosperity farmers sometimes purchased land. A slight movement in this direction to some extent counteracted the result of the tendency on the part of landowning farmers to alienate their estates.

But by 1875 the foreign wheat supply had become more easily accessible as well as more abundant; and the depression which followed ruined hundreds of farmers and rendered many of the landlords comparatively poor. There are many phases of this depression which have a peculiar interest to the agricultural economist, but none other could be studied with more profit than the inability of the landlords and the farmers to adjust themselves to the new situation. The depression has now practically passed, not because prices are better, but because a new generation of farmers who are willing and able to adjust themselves to the conditions under which world competition has placed them have taken the place of those who could not succeed without high prices.

We are interested in this depression because of the effect it had upon the few remaining farmers who owned land. In 1895 the Royal Commission on Agriculture sent assistant commissioners into the various parts of the country to gather information concerning the effects of the agricultural depression. Many of these assistant commissioners did not report upon the landowning farmers, — possibly because they found no representatives of this class, — but others have given valuable bits of information.

Cumberland still retained some of her statesmen in 1895, but the problems of the second quarter of the century were still confronting them.[1] In consequence of the legacies and annuities which eldest sons had to pay on the basis of the high prices which

[1] The Report by Mr. W. Fox, Parliamentary Papers, 1895, C.–7915–I, § 51, forms the basis of this paragraph.

prevailed before the depression of 1875, a great many yeomen farmers were "overhead and ears in debt." Not only had prices fallen but the number of years' purchase at which land could be bought had been reduced. These estates were usually mortgaged, and often so heavily that the farmer who nominally owned his land had more to pay as interest than the tenant farmers paid as rent. It is said that this class of farmers had been gradually decreasing in numbers for many years.

"There have been three causes for the gradual diminution in numbers of the statesmen," says Mr. Fox. "In the first place, many of them, tempted by the high prices offered for their land by large landowners, have sold. . . . Secondly, a number of them, since the lower prices, have let their land to tenants. But, thirdly, the qualities which are necessary to ensure success on a small holding, and which should be conspicuous both in the owner and his wife, namely, energy and thrift, are not necessarily hereditary qualities . . . and there are cases where land has had to be sold because the mode of life which was pursued by the father and accompanied by success was not acceptable to the son."

In Westmoreland the landowning farmers had gradually disappeared until, in 1895, they were nearly extinct. "However we may regret the change," to quote Coleman, after Wilson Fox, "it appears to have been inevitable. Land is an expensive luxury and not a profitable investment. As civilization progressed and the cost of living increased, returns were not proportionately advanced. The land became gradually burdened with charges, and, often suffering in condition, was eventually parted with, going as a rule to swell the larger estates. Nor, as regards the public advantage, need such a result be lamented, for it is quite certain that a flourishing tenantry under a liberal and wealthy owner are far more productive than owners whose means are too straightened to allow of the proper application of capital. Probably the most complete illustration of this change is seen in the Earl of Bective's fine property at Underly, which comprises about 25,000 acres, . . . A large part of this property was formerly owned by small proprietors, mostly statesmen. These men held on as long as possible, and were eaten up by debts and charges, and the soil

wretchedly impoverished. The trustees of the late Alderman Thomson, who himself, if I mistake not, sprang from a statesman family, bought up the farms by degrees, and there is still money waiting similar investments. In no case did the investment pay more than $2\frac{3}{4}$ per cent on the purchase money. In many cases the former owners continued as the tenants; and when the land was drained and limed and proper buildings erected, these men, who were formerly hard up, became well-to-do farmers. . . . The Underly estate probably yields more than double the produce of which the land was capable when divided and ill-managed." [1]

Writing of this same estate, Lefevre gives some additional facts which are very interesting and give clearness to the picture. "This great property . . . was gradually accumulated and purchased under the express direction of the will of a man who, two generations ago, made a large fortune in trade, and whose only daughter married a nobleman. The estate was made up of two hundred and twenty-six different purchases, nearly all of them cases where the vendors belonged to the class of yeomen farmers, or statesmen, as they are called in that district, who, themselves and their ancestors, had cultivated their own lands for many generations. Instead, then, of two hundred and twenty-six distinct owners of land, there is now a single owner. It may safely be assumed, in respect of this great property, that, under the existing system of family entail permissible by law, it will for generations to come remain intact in a single ownership." [2]

Lincolnshire still possessed a large number of small peasant proprietors and some large yeomen farmers in 1895. Many farmers had bought land during the prosperous times prior to 1875 and had paid double the price for which it would sell after the fall in prices had brought on the depression. A large proportion of the purchase money had frequently been obtained by giving a mortgage on the land, and in some cases the land had fallen in value until it was worth less than the face value of the mortgage. Fox says of these men, "Many . . . have already sunk,

[1] Report of Wilson Fox (Assistant Commissioner, Royal Commission of Agriculture), Parliamentary Papers, 1895, C.–7915–I.

[2] G. Shaw-Lefevre, M.P., Agrarian Tenures, p. 12.

overwhelmed by the burden of interest they had to pay."[1] Mr. Fox devotes several pages to the condition of the small landowning farmers of the southern part of Lincolnshire. Most of these people worked hard and lived poorly. In reading the report one might easily think Mr. Fox was paraphrasing Young's report on the same district, written one hundred years before, were it not for the further evidence of ruin on every hand. In speaking of these small proprietors, Fox says, "The possession of land has been the ruin of hundreds in the past and is a mill-stone around the neck of hundreds in the present. Not the least regrettable reflection in this sad story is that most of these small owners are the flower of a class, the pick of the foremen and the laborers, who excelled in the performance of their duties, who toiled and saved and denied themselves for years to raise themselves out of one class into another, and who, when they had bought their independence and a new social position, found themselves bound to admit failure, their hard savings gone, their energies wasted, their hopes crushed, to retrace their steps back into the ranks out of which they had stepped, at a time of life when they had expended much of their vitality and all their ambition."[2]

In Cambridgeshire the depression proved very disastrous to the farmers generally. The landowning farmers, burdened with mortgages, were the first to succumb; and those of this class who remained, in 1895, were in great straits. "In several districts," says Fox, "evidence was privately given me of this, and in one of them a gentleman, who was in the position to know the facts, stated that all the yeoman farmers there . . . were heavily mortgaged."[3]

"We have had a good many yeomen in the county of Norfolk," said Mr. Read before the commission in 1897, "and I say that they are much the hardest hit of all. They have to bear both the losses of the landlord and the losses of the tenant, and there have been the most disastrous failures. A good many of our farmers

[1] Fox, "Lincolnshire," in Parliamentary Papers, 1895, C. 7571.

[2] *Ibid.*, § 190.

[3] *Ibid.*, "Report on the County of Cambridge," in Parliamentary Papers, 1895, C.–7871, § 53.

were told twenty-five years ago that the best thing that they could do was to buy their farms, and they did so, but they had not enough cash, and they had to mortgage their farms. They have gone to the wall worse by far than the common tenant farmers. There are a good many of our old and most respected yeomen who have disappeared within the last few years. I feel confident that they will almost all of them go unless there is a change for the better." [1]

Speaking of Suffolk, Mr. Everett of the commission said, "We had a great many yeomen farmers and in the intense competition for land in the good times, a great many men took that course of making themselves, as they thought, independent; they bought land and mortgaged it, and I should think three-quarters of that class of men are now stripped of every penny they had." [2]

During the "good times" the farmers of Wiltshire saved money and many of them were able to purchase farms, but as in other places, they borrowed money and their investment proved disastrous. One witness cited four instances within his own knowledge of farmers who bought their farms about 1875. Of these, two had come to grief and absconded, a third had lost his farm, which was in the hands of the mortgagee, while the fourth was still holding his land.[3]

In speaking of the condition of landowning farmers in general, the final report of the royal commission states that "As a rule their properties, whether inherited or purchased by the present proprietors, are charged with mortgages, and the mortgagee makes no remission of the interest due to him. In consequence of the shrinkage in the value of land, the interest on the mortgage has become in many cases a burden which the owner has been unable to bear, and frequently where the yeoman farmer has succeeded in paying the interest due from him it has been a heavier rent than he would have paid to a landlord." [4]

In 1900 over twenty-one million (21,286,632) acres, or 86.1 per cent of all the land under crops and grasses in England, was

[1] Read, Parliamentary Papers, 1897, C.–8540, § 113.
[2] Parliamentary Papers, 1897, C.–8540, § 113.
[3] Rew, Parliamentary Papers, 1895, C.–7624, § 28.
[4] Parliamentary Papers, 1897, C.–8540, § 113.

occupied by tenant farmers; while about three and one-half million (3,427,158) acres, or 13.9 per cent, was occupied by owners.[1] But of this three and a half million acres no great extent was occupied by yeoman farmers. Indeed, the landowning farmers are at the present time very rare in England. By making close inquiry while passing through more than half of the counties of England in 1899, the writer found a scattering few who owned the land which they cultivated, but such farmers were extremely rare. The greater part of the land designated as "occupied by owners" was composed of the "home farms" of landlords, and of farms which they had not been able to rent since the depression. In this way the Duke of Grafton occupied five farms beside his home farm, in 1899. The five farms aggregated five thousand four hundred and ninety acres. Each one of these farms, as well as the home farm, had a bailiff upon it. There were more than seventeen thousand (17,189) farm bailiffs in England according to the census of 1891. Tenant farmers who keep bailiffs are very rare. The vast majority of these bailiffs were, doubtless, operating land which is recorded in the agricultural returns as "occupied by owners." Between 1871 and 1881 the number of bailiffs increased nearly three thousand (2889), which may fairly be looked upon as the number of farms which could not be rented, and which the landlords preferred to farm in this way rather than leave the land to grow up in weeds. This gives some notion of the extent to which land has been compulsorily cultivated by landlords.[2]

The agricultural returns for 1898 indicate that 25 per cent of the farm land of Kent was occupied by owners. In commenting upon this fact Mr. Whitehead says, "Much of this land occupied

[1] Parliamentary Papers, 1901 (House of Commons), Vol. LXXXVIII, p. 38.

[2] In 1899 the writer met many estate agents desirous of finding tenant farmers who would rent the farms which were then being farmed by bailiffs, and hence reported in the agricultural returns as land cultivated by owners. Between 1895 and 1900 the percentage of the land under crops and grass in England which was occupied by tenants increased from 85.1 per cent to 86.1 per cent, which shows that about one-fifteenth of the land farmed by owners in 1895 was in the hands of tenants in 1900 (Parliamentary Papers, 1896, Vol. XCII, p. 48; *ibid.*, 1901, Vol. LXXXVIII, p. 38).

by owners is farmed by them compulsorily, on account of the failures of tenants and of inability to replace them, and the amount of land thus held by the owners has increased nearly 20 per cent in the last ten years. The small landowners have in most instances been compelled to sell their land, and the yeoman of Kent has practically disappeared." [1]

Today practically all the farmers in England lease the land which they occupy. The young man becomes a tenant farmer with the expectation of remaining such all his life. When money has been saved he looks for a larger farm where he may employ his surplus funds, but very rarely does he even think of investing in land. To an American this seems strange, and one may be tempted to say that it is because there is no land on the market; but while there is much land which cannot be sold, there is always land for sale in England.

The writer has talked with many English farmers upon this subject and has been told on every hand that they cannot afford to "lock up their capital in land," they need it all for stocking their farms. And this is not because the farmers are poorer than American farmers but because land has long been worth very much more, and from forty to fifty dollars an acre is required to stock a farm in such a manner as will make it bring profitable returns.[2] It would not be far wrong to say that, with conditions as they were before 1875, it required as much wealth to stock a farm in England as it did to own and stock a farm of the same size in most parts of the United States. If the farmer is to own land he must, as a rule, reduce the scale of his operations; for when he invests in both land and stock the farm must be much smaller than if he invests in the stock only and leases the land. This is very undesirable, not because small farms are less profitable, though for some purposes they are, but because investments in land do not yield more than $2\frac{1}{2}$ or 3 per cent, while good farmers count on making 10 per cent on their investments in stock.

The farmer who would buy land must not only be willing to

[1] "Sketch of the Agriculture of Kent," p. 4, of author's reprint.

[2] This is due partly to the fact that stock and machinery cost more; for example, eighty dollars is the ordinary price for a milk cow of common stock.

take a return on his investment much less than he can make by investing it in farming, and even less by 2 or 3 per cent than he would have to pay for borrowed money, but the fees and other charges which he must pay for transferring land are so high that they amount to an important per cent of the price of the land. The smaller the purchase the greater, relatively, is this expense. In case of a large estate the cost of making a transfer is comparatively small, but where the purchase money is one thousand pounds or less the charges are enormous. Hoskyns[1] gives a set of tables showing the cost of transferring land. According to those figures the purchaser's average expense, irrespective of the stamp duty, for purchases of one thousand pounds or less in value was about 6 per cent of the purchase money, and in one case where the sum paid for the land was only one hundred pounds, the purchaser's expense of transfer, aside from the stamp duty, was more than 23 per cent. It is claimed that the vender's expenses were, in every case, much higher.

There has been an agitation in recent years which looks towards the reëstablishment of peasant proprietors in England. The Small Holdings Act of 1892[2] made provisions by which each county council was empowered to acquire land, improve it and sell it to the small farmers on unusually favorable terms, but this has had no important influence upon the ownership of land by the farming classes.

SUMMARY OF CONCLUSIONS

We have seen that two hundred years ago more than half the farmers of England owned the land which they cultivated. Today practically all are tenants.

This extinction of the yeomanry took place in some parts of England during the eighteenth century. In some counties this was a result of the "new agriculture" which made enclosures and large farms more profitable than small farms in the common fields. The new agriculture required, also, that more capital be applied

[1] "Systems of Land Tenure," Cobden Club Essays.
[2] 55 and 56 Vict. C., 31.

upon each acre, and calculating farmers found it profitable to rent as much land as they had the money to stock rather than to lock up their capital by investing it in high-priced land. In other counties the yeomen farmers were crowded out by gentlemen farmers — men who, having made money in other pursuits, became farmers because agriculture was the favored pursuit among the wealthy classes of England.

But taking England as a whole there was no marked decline of the yeomanry until the third decade of the nineteenth century. Between 1820 and 1875 the number of landowning farmers was gradually reduced to insignificance. During this period the fact of greater returns on investments in farm stock than in land remained a constant factor. The neighboring landlords and men of wealth generally were still ready to consolidate small estates into large ones. But the condition which led to a rapid decline during this period was the fall in prices. During the Napoleonic wars, when prices were high and rising higher, it was possible to buy land and pay for it out of the profits of farming. It was then the common thing for the more successful farmers to invest their savings in land. As a rule, they purchased more than they could at once pay for and gave a mortgage to secure the payment of the indebtedness thus incurred. It was also common among the yeomanry for one son to succeed to the family patrimony upon the payment of certain sums for the provision of his brothers and sisters. Thus it was that a large proportion of the yeomen farmers were burdened with indebtedness which the fall in prices made it impossible for them to pay. Some sold their encumbered farms within a few years. Others held out longer, but in time they too gave up or died, and their farms were sold.

Farmers rarely invested in land after 1820. The farms were sold to wealthy men who wished to build up family estates. These large estates were valued for the social standing which they confer upon their owners as well as for their returns in the form of rent. They are commonly kept intact by a system of entails so that once the small estates become incorporated into the larger ones, they rarely come into the market again. There is still land for sale in England, but the price is so high, compared with the value of

produce, the expense of making the transfer so great and the land-credit system so poor that farmers do not often care to indulge in the luxury of landownership. On the other hand, the relation between landlord and tenant is very satisfactorily arranged, the farmers are, as a rule, contented with the present system, and the fields of England prove that landownership on the part of farmers is not essential to good agriculture.

THE EPOCHS OF GERMAN AGRARIAN HISTORY AND AGRARIAN POLICY

An Inaugural Address by Dr. Carl Johannes Fuchs, Professor of Economics and Finance at the University of Freiburg, in Breisgau

(Translated from the German by Dr. Francis Kingsley Ball)

[The inaugural address delivered on March 2, 1898, before the university of this city is here again presented with the omission of introduction and conclusion, involving a slight modification in the arrangement, and with the addition of bibliographical references and notes. Apart from these changes the address has already appeared in the supplement to the *Allgemeine Zeitung*, Numbers 70 and 71, of March 29 and 30, 1898. It is based on the more complete treatment of the same material in the author's articles on agrarian history in the "Wörterbuch der Volkswirthschaft," edited by Elster, now in the course of publication by Gustav Fischer at Jena. — Preface]

IT MAY be said with confidence that no other branch of the inquiry into economics, especially into the history of agriculture, has been so much advanced during the last ten or twelve years as that of German agrarian history and the history of the older German agrarian policy. The fundamental investigations of George Hanssen have been followed by the works of Meitzen, Inama-Sternegg, Lamprecht, and Gothein, and by those of Knapp and his pupils; one after another of the great regions of Germany and one epoch after another have been explored with regard to their development along the line of agrarian history and agrarian policy. As a result, the agrarian development of our people, at least during the last thousand years, since the time of the Carolingians, lies clear and distinct before our eyes. We now know how the dualism arose which pervades and infects the economic life and thereby the whole economic policy of modern Germany, a dualism characterized to-day by the terms East-Elbean

and West-Elbean Germany. We now know, also, that this dualism can bear but superficial examination; that the agrarian development of Germany produced successively three forms of rural organization, the results of which exist to-day side by side in vast regions and constitute the present agrarian character of the German Empire. Indeed, one of these forms is found in two separate districts; so that, to be exact, we should speak of an agrarian division of three or four parts. Step by step has the path been discovered which led through this period of a thousand years from the past to the present. We now know why it is that to-day, in different parts of our country, things look as they do and not otherwise.

And inasmuch as the government, at least in the largest state of our empire, is on the point of directing this development into new channels, and we are standing on the threshold of a new epoch of agrarian history, the time seems propitious, in the light of all this recent literature, to cast a glance backward over the traversed way and point out the milestones that mark off its course.

I

Agrarian history is the history of the soil and its tillers, the history of the rural policy. It has, therefore, always two sides: the field system, that is, the technical definition of the arable land; and the system of landownership and of labor, in a sense the agrarian organization, or the definition of the rights of the people to the soil and to each other in relation to the soil, hence the legal and social relations of the owners and tillers. If these two, owner and tiller, were not identical, there existed between them a relationship of domination and dependence, a relationship which did not cease until the present period, with the creation here, as in other domains, of the right of free contract. The chief problems of agrarian history are, therefore, first, settlement, with the resulting subjection of the land in the field system; secondly, the origin of the personal subjection of the tillers, the peasants; thirdly, the dissolution and abolition of this twofold bondage. If we assume that personal bondage in the form of the manorial

system originated simultaneously with settlement, two chief epochs of agrarian history result; three epochs if the contrary is held: settlement, the development of the manorial system, and the emancipation of landed property. In German agrarian history two forms of personal bondage, an older and a more recent, must be distinguished: the manorial system and estate farming. Indeed, these appear not only successively but simultaneously. In only one part of Germany has the former changed to the latter.

Now this resulting dualism of the manorial system and of estate farming is identical with the above-mentioned dualism existing in the present agrarian policy of the German Empire. It is well known that a line drawn approximately from the Elbe and Saale divides the empire into two parts of very different rural conditions: in the West are found chiefly small or medium-sized estates, that is, peasant farms, and only a few large estates; in the East, chiefly large and very large estates, fewer and almost no small farms, and these larger than in the Southwest. In the eighteenth century, at the beginning of the emancipatory legislation, we find, then, west of this boundary the manorial system only; east of it estate farming, springing from the former. But this dualism dates back still farther, for that dividing line is approximately the old Slavic boundary of the ninth century; the German regions east of the Elbe, where the large estate is found in the eighteenth century, form the great territory of colonization, which, in the main, was not won back to Germany and German civilization until the eleventh century, and which has, in consequence, a separate agrarian history, about a thousand years later than that of the rest of the country.

I began with the proud words that the investigation of German agrarian history and agrarian policy of the last thousand years may be for the moment considered as closed; but it is a general experience in all historical research that the better we become acquainted with the development of the more immediate past, the less secure we feel concerning remoter times, for we no longer content ourselves with the conclusions hitherto accepted, and ask more and more questions of the earliest period which the meager material at hand cannot answer. And so the first epoch of

German agrarian history, from remote antiquity to the time of the Carolingians, from the first settlement to the rise of the large manorial estates, has, in consequence of the conclusive researches of recent times, become more uncertain than ever.

First of all, the old question of the origin and age of the manorial system has again arisen, which was discussed so much in the eighteenth and the first half of the nineteenth century; the question whether, after the first permanent settlement, in the adoption of agriculture as the chief means of livelihood the great mass of the old Germans were free members of the mark community, with equal rights, or peasants subjected to a lord. This question was formerly answered one way or another for political reasons, the answer serving as a historical justification for or rejection of the contemplated or accomplished emancipation of the peasants and the granting to them of property. The liberal construction prevailed at that time, and has remained in vogue up to the present; but to-day, when such props for emancipating the peasants are no longer needed, this prevailing view, which still forms the basis of Meitzen's recent great work, is severely shaken in Germany by two simultaneous attacks, from independent quarters free from political bias, at the hands of Wittich and Hildebrand, after having already received similar treatment from Seebohm, Fustel de Coulanges, and other foreign writers on agrarian history.

Wittich, starting with the investigation of the later development in Lower Saxony, comes to the conclusion that the manorial system prevailed even in the time of Tacitus; while Hildebrand, from comparative ethnological researches, disputes for the earliest period the existence of a free mark and village community, as well as that of the manorial system and landed property in general, but contends that the transition to agriculture caused from the very outset a certain dependency on the part of those engaged in it: in the words of the prophet, "Whithersoever this implement (the plough) hath gone, bondage and shame have followed in its wake." Thus the old hopeless contention over Cæsar and Tacitus has again burst into flame.

With this controversy, however, is closely connected the question of the causes of the dualism of colonization in Germany

which has come down to our day, the dualism of isolated farmsteads and of villages. Against the theory advanced by Meitzen but never generally accepted, that the individual farms are Celtic, the village settlements Teutonic, are pitted the theories of Knapp, Wittich, and Hildebrand: Knapp explains the different forms of settlement from the quality of the soil; Wittich and Hildebrand perceive in the individual farmstead the general primitive form of settlement. Furthermore, there is the question of the origin of the mixed lots, that is, the field system characteristic of the old German village settlement, whereby the fields of the individual do not form one whole as in the isolated farmsteads, but are divided according to the quality of the soil and scattered over a large area, lying in neighborly proximity like the farmsteads in the village. In this case the question is whether an intentional rationalistic origin of this peculiar division is to be assumed, substantiating the alleged equal claims of the members of the mark or village community to equally valuable lots; or a historical origin, due to the gradual cultivation of the different tracts or to continuous division; or else a conscious creation of this system, not by a free village community, but by a lord, for the realization not so much of like rights as of like duties. Hanssen, Meitzen, Knapp, Hildebrand, represent here just so many different theories.

Finally, if we assume that the origin of the manorial system dates from the first settlement, we must necessarily adopt a view, different from the current notion, as to the origin of the large manorial estates in the time of the Carolingians. It is, then, no longer a question of the origin of the manorial system in general, but only of the large manorial estates. In accordance with this conception the persons described in the deeds of transfer and commendation are not formerly free peasants, who give themselves up to a manorial estate, but small lords, who transfer their farms, together with the bond peasants settled on them, to a greater lord, and receive them back from him in fief.

It is not here my task to examine these hypotheses with critical thoroughness, nor to decide these old and new controversial questions; I scarcely feel competent to do so, and without further investigations the solution is as yet wholly impossible.

But I will say that in my opinion these questions are well worth serious consideration, and that they force us to scrutinize the old, generally accepted views, to examine the old material from this point of view, and to contribute new material for the final decision. The importance of the new hypotheses was recognized by the Fifth Historical Congress in placing on its program the question of the origin of the manorial system. We need, first of all, additional investigations. The Southeast of our empire, Bavaria south of the Danube, the Southwest, especially Baden, are, for reasons that will appear hereafter, a classical field of observation. There village settlement and isolated farmsteads appear side by side; there Roman, Gallic, and German agrarian history have touched and influenced each other. We are therefore eagerly expecting the appearance of the second volume of Gothein's economic history of the Black Forest.

II

Disregarding, therefore, for to-day the uncertain ground of the oldest period, and beginning our epitome of German agrarian history with the second great epoch, since the time of the Carolingians, we find that while the manorial system is definitely established in the older western part of Germany, and in the colonized Northeast the system of estate farming is in process of formation, throughout the older Germany exists a uniform rural system, namely, that of the large manorial estates and villications, or bond farms. It is nothing but the transfer of the organization of the demesnes created in the year 812 by Charlemagne, in the "Capitulare de villis," to the manorial estates of the bishoprics, cloisters, princes, and great lords.

These manorial estates consisted of numerous farmsteads belonging to a lord, and of the manorial or bond farm. The land of the latter was cultivated by the compulsory services of the peasants in the field and elsewhere, particularly in carting; but these services were only trifling as compared with the tithes in money and farm products which the peasants were obliged to contribute to the maintenance of the lord's household in return for the use of their farms. The smaller manors had from

twelve to twenty of these bond peasants; the large properties, particularly the cloisters, had them by the thousands. Although these peasants were personally unfree, bond, bound to the soil, they nevertheless enjoyed unrestricted civil rights, formed a guild according to the law of the court, and had hereditary right of usufruct in their indivisible farms. Their tithes and services, fixed from ancient times, were not subject to increase.

Since these manorial estates were usually not contiguous lots, but mixed hides of land, in consequence of which the peasants of a village might belong to different manors, it was not possible to manage the larger properties from a central point. They were divided, therefore, into several bond farms, each of which formed, with the peasants belonging to it, a villication, and was managed for the lord by one of his agents, the villicus, or steward, originally selected from the peasants, later from the ministerials. The agent tilled the manorial land with its own serfs, aided by the peasants, and gathered in the tithes for the lord.

The significance of this entire system is thus summarized by Knapp:

> On the one hand we know merely the pursuit of agriculture, and, within this, farming on a small scale only, the family farm. On the other hand we face the problem of feeding the king, the duke, the count, the freeman; there must also be an economic foundation for churches and cloisters. All this is accomplished by the manorial estate. It is the prerequisite for all higher and freer pursuits.

If in this period, approximately from the tenth to the twelfth century, the agrarian system was uniform throughout older Germany, thenceforward the further development follows remarkably divergent courses in the northern and southern halves of the country; so that we must now make a distinction between the Northwest and the Southwest.

In the Northwest, beginning with Lower Saxony, the later Hanover, this further development of the manorial system is manifested after the twelfth and thirteenth centuries by the disintegration of the villications. The desire of an increased income on the part of the lords, caused by the appearance of the monetary régime which followed in the wake of the crusades

and the mismanagement and dishonesty of the agents, brought about, first, the leasing of the villications to the agents for several years against a fixed sum of money or quantity of grain; and then, when this system proved inefficient, the villications were disbanded.

The lord liberated the serfs' persons, but the serfs lost thereby their hereditary right in their hides of land. The lord took the land back, and, in keeping with the improved methods of agriculture which were now in vogue, he merged into one farm what had hitherto been four peasant farms of thirty acres each, and leased the whole to a freed serf, but now only on the terms on which the steward had previously held the entire villication, namely, with a stipulated large contribution of grain, the amount of which might, on the expiration of the lease, be increased. Thus originated the peasant stewards of Lower Saxony, and the large Lower-Saxon peasant farm of four hides; and with the stewards a new, purely manorial system without authority over the person of the peasant, the newer manorial system.

But what became, then, of the remaining three fourths of the peasants? Some of them were apparently forced down to a lower class of the rural population, the cotters, with but little land and that not in the arable area. Others moved to the towns, then just formed; and still others, spurred on by need rather than by the desire of adventure, moved into the land of the Slavs, east of the Elbe, whither they were drawn by two considerations: personal freedom, so dearly bought, and the hereditary right of property, which they had lost in their native land.

This transformation of the manorial system, but recently established by Wittich, took place, in the manner described, only in a part of Northwestern Germany, in Lower Saxony; but in Westphalia too the agrarian system gradually changed in the same way, save a remnant of personal bondage, which constituted, however, nothing more than a source of income.

Soon after the beginning of this process Lower Saxony first witnessed the conflict between state and manor for the peasant. The state, interested because of the taxes it levied on the leased farm, came off victorious. In the first place, the lord was prohibited from

increasing the rent, and the lessee was, as early as the sixteenth century, granted a hereditary right in the farm.

This was the first and at the same time the most vigorous agrarian policy in Germany. No later measure of the third epoch has surpassed it.

But the state went still farther in curtailing the freedom of disposal of lord and lessee in regard to leasehold: it made, at the end of the seventeenth century, the closed, indivisible farm a legal institution, and exercised over it the legal functions of the manor. Thus, at the end of the eighteenth century, the private lord had become the merest rent collector.

While thus in Northwestern Germany the system of villication was broken up in the twelfth and thirteenth centuries, and the newer manorial system and leasehold took its place, it remained undisturbed in its older form in most of the regions of Southern, Southwestern, and Rhenish Germany, and became after the thirteenth century the settled policy. The serf was made the tributary owner. The lord does not succeed in increasing the economic yield to the level of the property resulting from the dissolution of the villication in Lower Saxony: on the contrary, the manorial system gradually vanishes; it crumbles away of its own accord. On the other hand, the right of judicature, severed in principle from it, attains here greater significance, and grows in some instances into the sovereignty of a small territorial estate. Patrimonial jurisdiction and barony are for these regions the characteristic forms of government. With this right of judicature was frequently, but by no means always, coupled personal or hereditary bondage, which consequently appears here later detached from the manor. The peasants are in bondage down to the eighteenth century; but this bondage gradually loses its significance, the serf being bound merely to make sundry contributions, although it must be said these are sometimes onerous, as, for example, the mortuary. On his personal and social position it had ceased to have any effect.

In the fifteenth and sixteenth centuries, however, things were different. The Peasants' War was caused mainly by the numerous personal contributions which the peasants were obliged to

make to many different lords. Their tithes were oppressive ethically and socially rather than economically, but these were exploited without mercy, and attempts at increasing them were not infrequent. To this must be added the usurpation of the common pasture. The Twelve Articles call by no means for abolition of all tithes, but, generally speaking, only for the reëstablishment of the old custom and the restitution of the right to the common land.

In the North, and later in the Northeast, the agrarian system was subjected to a seasonable transformation, adapted to the general economic conditions, and inducive to economic progress. It was, in consequence, so consistent and rational that reactions of the peasantry affected and injured by the change were only of exceptional occurrence. In the Northwest, as we have seen, the supreme power of the state was soon exercised in behalf of the peasant. Its aim was not to free him, but to protect him; and this object was attained. In the South, on the contrary, particularly in the Southwest, the old system was not completely replaced, the peasants not personally emancipated; and so they did not have the least participation in the civilization of the outgoing Middle Ages and the early Renaissance, although the movement had its inception in this very region. They were socially of low standing and economically backward, since no radical reformation of the economic policy forced them to greater exertion of their powers and to spiritual emancipation, as was the case with the Northwest. It was the obsolete, the irrational, under which both parties chafed. The bondsman, fretting under the tithes and particularly under the disdainful treatment of the hated clergy and bureaucracy, who represented the small territorial government, found in the Peasants' War a free outlet for his long-suppressed passions. It is always needless oppression that embitters most strongly. In these regions, which harbored the oldest civilization and densest population and practiced the division of farms, there was a contributory cause in the incipient formation of a rural proletariat.

Since the issues were, however, not comprehensive economic principles, and a change in the system or a check of the growing oppression did not threaten the economic existence of the lord or

the patrimonial judge (who is here the more important element of the two), conditions after the Peasants' War, in spite of the defeat of the peasants, did not in general grow worse. The contrary, rather, took place. The wanton manipulation and augmentation of those mainly personal tithes was somewhat discouraged. Since the sixteenth century the condition of the peasantry in the Southwest has, for the most part, not essentially deteriorated.

Far different was the course of development in the Northeast, in the regions east of the Elbe, which were not Germanized and colonized until after the twelfth century. The real decline of the peasants, the gradual deterioration of their condition that sprang from colonization, dates from this very period, from the development of the system of estate farming and the rise of the large farming estates.

These regions, won partly by the sword, partly by peaceful means through the conversion of the native ruler, were, as a result of a vast colonization that took place between the twelfth and the fourteenth century, opened up to German civilization. Everywhere the German monk and knight were followed by the German peasant with the heavy German plough. He hewed out new hamlets in the forests, or settled in the Slavic hamlets already at hand and either drove out the Slav, who with his light hook-plough practiced only primitive methods of agriculture, or tutored him in tilling the soil.

The salient characteristic of the agrarian policy created here by German colonization is the undisputed presence everywhere of a manorial system before the advent of the peasant, at least of the German peasant; indeed, it was a threefold landed proprietorship, that of the reigning prince, of the German cloisters, which received as gifts vast tracts of land for colonization with German peasants, and of the great vassals constituting the high German and native nobility. These three landowners together systematically colonized their domain with German peasants, who came, for the most part, from Lower Saxony, in consequence of the mobilization there of the country population. As already mentioned, they received here, first of all, the best personal and proprietary rights: personal freedom and hereditary right of

possession in their new farms; as a rule, the right of ground rent; to some extent, also, hereditary leasehold. In these domains of the East, where Germanization was a peaceful process, the Slavic population not being driven out, the latter also received, on the adoption of German methods of agriculture, the better German right. The fusion of the Slavs with the immigrated German population was accomplished in not more than two centuries, as is shown by the particularly characteristic examples of Pomerania and Rügen.

German agrarian history in the Northeast begins, therefore, immediately with the second form of the agrarian policy of older Germany, the pure manorial system. But there exists this important difference, that the large manorial estates in the East were from the very beginning geographically closed domains. And this territorial character of the manorial system in the region of colonization is one source of the later farming estates. We meet with the other source in the knights' frequent and extensive ownership in villages, about a century after the close of the colonization. Among the peasants in the villages we find usually one or more knights in possession of little farms, freeholds given to them for their services. These freeholds consisted either of vacated farms or of settlers' lots, granted in compensation for undertaking and conducting the laying out of a new German village. The knights are originally simply neighbors of the peasants, without rights in them. In the succeeding period of impotence and financial distress of the sovereign, one of these knights would, however, acquire all the rights in the peasants of the village where his property was situated, the rights hitherto enjoyed by the reigning prince or another lord. And perhaps he would acquire similar rights in one or more neighboring villages: from the reigning prince, the entire, even the highest jurisdiction, and the public tithes; from the lord, suzerainty with the right to the ground rents and leases.

In this way the knight's property becomes the center of a small manor, likewise geographically closed; the knight's landownership, right of judicature, and manor are merged, giving rise to estate farming. The manors are broken up into numerous

farming estates. This estate farming is, therefore, not an ideal complex of rights, titles to rents, and the like, but a real territory, in which the landed proprietor is also the highest authority, and its tenants his private subjects, who must cultivate his estate for him.

With the completion of this process, which we find in the Mittelmark as early as the second half of the fifteenth century, there begins in these regions the decline of the peasantry. They are gradually eliminated from the sphere of public jurisdiction and completely given over to the lord. The state has no longer any interest in them, since it relies on the lord for the taxes. The personal legal status of the peasant deteriorates; he is bound to the lord. If he owns a farm within the territory of the lord, he is in subjection for his services; and the period of the Reformation affects adversely his right of possession and his economic condition. In consequence of the changes in the military régime, and the rise of mercenary armies, the knight, who cannot become ruler of the country, nor, except in rare cases, an urban patrician, turns farmer and immediately sets about adding to the land properly belonging to the manor by annexing lands hitherto held by the peasants. Here begins the strangling of the peasants, and the formation of the large farming estates. Since the land, thus increased, is still cultivated by the compulsory services of the peasants, now numerically fewer, the labor is proportionally increased; and to prevent the peasants from running away, their persons are made subject, the subjection being hereditary.

The government, here much weaker than in the Northwest, attempted in vain in the sixteenth century to stay this process. After the secularization it applied the same methods in its new domains. The introduction of the Roman law also contributed to the depreciation of the personal and property rights of the peasants, although, it must be said, not quite to the extent usually assumed.

It was the Thirty Years' War, more than all else, which accomplished this result. The war wrought here particular devastation; and the civilization, being more recent, recovered with greater difficulty than in the older Germany. Most of the peasant farms were destroyed, and could be restored only with the help

of the estate. But no more were restored than were necessary for working the estate with the utmost utilization of their labor. The others were at first kept idle, and then gradually absorbed. The peasants thus rehabilitated are, therefore, no longer independent entities, but merely working forces for the estate, and they now receive a different and inferior title to the land: in general, only leasehold, either hereditary or simply for life, or revocable at will; at all events, no longer a real title, no longer a hereditary right to ground rent. Where this existed before, hereditary leasehold becomes the prevailing form; where the leasehold existed, the nonhereditary leasehold follows. The state of subjection is further accentuated, and heavy penalties are laid on the escape of the subjects.

In the following eighteenth century this process of the decline of the peasantry in the Northeast continues. The Northern and Seven Years' wars had results similar to those of the Thirty Years' War; and after the middle of the century the progress in the technique of agriculture, which could not be introduced by the exploited, degenerated, and subjected peasants, imparted to the lords a mighty impulse to the enlargement of their estates by the absorption of entire peasant villages. This inaugurates a new and the worst period of the exploitation of peasants on a large scale for financial gain. In the aristocratic republics of Mecklenburg and Swedish Pomerania the so-called bondage, the hereditary subjection, becomes a reality; the subject is sold without estate, like merchandise.

This last development, however, could take place only in the smaller part of the regions east of the Elbe. In the old provinces of Prussia it was opportunely blocked by Frederick the Great, in the Act of 1749, which was designed to protect the peasants by prohibiting their eviction. Here the government had finally become strong enough to take an interest in the preservation of the peasantry, although for military rather than for financial reasons. This first successful agrarian measure is of the very greatest importance for the subsequent emancipation of the peasants: without it there would hardly have been peasants to emancipate. But this brings us to the threshold of the third epoch.

III

Before we turn to the third great epoch, dealing with the legislation of emancipation, we shall attempt to present a comprehensive picture of the rural policy of the eighteenth century, the dissolution of which was the object of the legislation. We are here brought face to face with the three forms of historical development whose origin we have followed. They exist simultaneously side by side in large and clearly defined regions. We have, therefore, a threefold division of this rural policy of the eighteenth century: a region of the older manorial system, gradually disintegrated or changed to the small sovereignty, with personal bondage, in the South (more exactly the Southwest); a region of the newer manorial system, with personal freedom, in the Northwest; and a region of estate farming, with a new form of bondage, in the Northeast. Between these there are of course transitional regions with mixed forms. We find occasionally in all these regions free peasant farms and free peasants, independent of all manorial relations, but, as a rule, only with the Ditmarschen, the marsh peasants of Bremen, and in East Friesland. With the mass of the peasant population, however, the status as to property and personal rights in these three chief regions differs greatly.

In the Northwest these rights are for the most part good. The leasehold, which here prevails, has become a hereditary right of usufruct, the compulsory services are slight, there being generally but few of the larger baronial estates. The persons of the peasants are, therefore, generally free. Only in Westphalia and Hildesheim do we find remnants of the old dependence, in its reduced form of tithes.

In the Northeast, on the other hand, property rights comparable to the leasehold exist only in the transitional regions, such as the Altmark and Lower Silesia; otherwise the rule is not a right of substantial property, but an inferior form, that of leasehold, either hereditary or only for life or at the will of the proprietor. The return rendered by the peasant for his rights does not consist chiefly of rents, as in the Northwest, but for the most part of compulsory services. In view of the number and extent of the

large farms to be cultivated, the services are so oppressive that it may be said they constitute the real end of the existence of the leasehold peasant. In consequence of this the entire rural population is unfree, in hereditary subjection, bound to the clod, that is, to the estate. Where we meet this hereditary subjection in connection with the bad nonhereditary leasehold, we have the newer form of personal bondage of the eighteenth century.

In the South, finally, that is, in Southwestern and Central Germany, including the kingdom of Saxony, which, having been won back before the great period of colonization, must be considered as belonging to this region, the older manorial system is fixed, petrified, the personal relationship between lord and peasant has disappeared, and the ground rents have become realty charges on the peasant farm. In consequence the farm becomes here regularly good property, even better than in the Northeast, that is, property subject to rent or settlement subject to hereditary ground rent. The duties performed for the court baron, who is a different person from the lord, are also slight, because baronial estates are here even rarer and smaller than in the Northwest; and these duties are compulsory assistance in hunting and in building operations rather than in cultivating the land. But bondage has existed from the Middle Ages, personal dependence on another lord, which in the eighteenth century took the form of tithes or rents. The rural policy of these parts of Germany, the Southwestern German agrarian policy, rests, therefore, on the three distinct institutions of the manorial system, judicature, and personal bondage.

However, this condition does not prevail uniformly in the entire southern half of the older Western Germany, west of the Elbe. A region in the Southeast, extending from the southern Black Forest through Algau and Old Bavaria does not belong to it. Here we find, as a rule, conditions of settlement inferior to ownership or hereditary leasehold; the manorial system has even greater significance, and the compulsory services are more severe; for there are more and larger baronial estates than in the South generally. It is possible that here also, as in the Northwest, a breaking up of the villications took place; but of this we have as yet too little knowledge: the subject is still to be investigated.

This survey of the conditions of the peasantry in the different districts shows us very plainly the reciprocal action between the development of the manorial system and property, or the peasant's right of possession in general.

Where the manorial system has lost its significance, the best right of possession exists: real property or hereditary leasehold.

Where the manorial system has been modified to the newer form, an inferior right of possession exists, yet one that has become hereditary and real: the leasehold.

Where the manorial system has expanded and become accentuated into estate farming, the worst right of possession exists, in general not being even a hereditary right: tenancy at will.

The interest of the lord in the land and his possession is accordingly of wide range.

Closely joined to this is still another factor, already touched upon, which likewise is at the bottom of an important differentiation of the rural policy in the eighteenth century, namely, a division of the peasant population into two large groups, signifying the existence of the closed farm and of sharply defined peasant classes.

The two are connected with each other: clearly defined classes (whole, half, and quarter farmers, and cotters, according to the extent and character of their holdings) are to be found only where the closed peasant farm exists, the farm in a narrower, technical sense. By this is meant a peasant farm in which appurtenances have been continuously preserved, and which has for a series of generations remained unchanged in the hands of its owners. The contrary is furnished by the peasant farms which may, by the sale of lots, be reduced in size or even wholly broken up: the so-called mobile landed property. As a result of the division usually made, and the consequent breaking up and ruin of the farms, we find here no clearly marked classes of peasants, but only the difference between burghers and undertenants, according to the different privileges enjoyed in the community.

This great contrast between the closed peasant farm, which by law or custom passes invariably into the hands of one heir, and the free divisibility still pervades and differentiates the rural policy

of the German Empire of to-day, although in a less degree than before the legislation of emancipation.

In the eighteenth century Germany was divided into four regions, according to the prevalence of one or the other system: a region of the pure closed farm, the territory east of the Elbe; a region in which the closed farm prevailed, the Northwest and in the Southeast the Bavarian districts south of the Danube, the South of Württemberg and Baden; a region of the prevailing free divisibility, Central Germany and Northern Bavaria; and a region of unrestricted free divisibility, on the Rhine, in Northern Württemberg and the level parts of Baden.

The survey of the relative occurrence of the two forms shows that the difference between the closed and the open farm is also related with the difference of settlement in isolated farmsteads and villages. The two are, however, not identical; for while the isolated farmstead is usually a closed farm, as in Westphalia, the reverse is not true: the occurrence of the closed farm is not restricted to isolated homesteads, but is found also in village settlements, as in Hanover and the Northeast.

But the institution of the closed farm is most intimately related with the manorial system in its different forms: it is met with, generally speaking, in the Northwest, the Northeast, and the Southeast, that is, in the domain where the manorial system or estate farming was the source of progress and prosperity; not in Southwestern and Central Germany, the domain of the decayed manorial system. This is quite natural, for here only we find the good property right, making possible a division of the estate. Freehold and free divisibility are, therefore, intimately related on the one hand; the manorial system and hereditary right on the other. The hereditary right exists essentially for the lord. It is originally a product of the manorial system or estate farming, of private domination as well as that of the state.

The question now presents itself, What are the final reasons for this heterogeneous development in the different parts of Germany, for this manifold but always correlated and coördinate differentiation in the rural policy of the eighteenth century? Why has not the development everywhere advanced to the most

modern form of the estate farming of the Northeast? Why has the manorial system in the Southwest decayed, without developing into the modern form? And why in the Northwest has it not further developed into estate farming?

This latter development was, as we have seen, prevented chiefly by the early intervention of the supreme power of the state in behalf of the peasants. The government was here able to accomplish this because, during one of the periods of complete impotency, particularly of financial impotency, it did not, as in the territory of colonization, waive all its rights in the peasants of the private manorial estates, a process that did not take place in the East until the sixteenth century, after having led in old Germany to the formation of the old large manorial estates, fully a thousand years earlier. Similarly in the Southeast, in Old Bavaria, the vast possessions of the Church, maintained for so long a period, checked the importance of the nobility. In the Southwest, on the contrary, the noble had no thought of increasing his holdings; his ambition was not to become farmer, but ruler. "Every imperial knight," says Gothein, "wished to emulate the prince, every landed nobleman wished to emulate the imperial knight, to be legislator and ruler. The wretched condition of the state was itself a weapon of defence for the peasantry."

We have, therefore, first of all a political factor, the development of the state in question, particularly of its finances. This development made the state more or less dependent on the privileged class, the nobles, and forced it more or less to sacrifice to them its public rights in the peasants. Then there is the different character and the importance of the nobility itself.

Added to this is the national factor, which doubtless contributed to the suppression of the peasantry in the Northeast, a suppression that is the more marked the less the domain in question was colonized by Germans, the more the Slavic population was spared and merely Germanized and merged with the German immigrants.

Finally, the different extent to which the Thirty Years' War affected the different parts of Germany and the power of their resistance against it, which differed in proportion to the age of

their civilization, the wealth and density of their population, have also exerted a great influence.

But above all these causes producing their different effects in the different regions of Germany, we must name, last but not least, a common cause, which to-day is likely to be as much forgotten as forty or fifty years ago it was overestimated: the influence of the soil and its configuration as the basis of all economic activity. A comparison of the regions showing the three forms of rural policy with the physical map of the German Empire makes this influence apparent. We perceive an obvious and after all natural connection with its physical division into three parts; and that this is in turn responsible for the different traits of our people has been clearly shown by that thorough student of our country, the late W. H. Riehl. These parts are, first, the lowland of Northern Germany; secondly, mountainous Central Germany; thirdly, the plateau of Upper Germany, namely, Lower, Central, and Upper Germany. These three regions have wholly different natural conditions of economic development:

The first is predominantly maritime, particularly suited for navigation and commerce, with its navigable rivers leading to the sea; but the rivers have little fall, hence scant development of industries dependent on water power. The second region, extending in the west from the Lake of Constance and northern Switzerland to Cologne, in the east to the Erz Mountains, in the form of a triangle, has a network of rivers and brooks, many small but useful water powers, therefore an early development and unprecedented variety of industries. The number of rivers in the third region is similar to that of the first; but the Alpine streams are not suitable either for navigation or for industrial purposes: "they separate, they do not unite."

The second domain, mountainous Central Germany, which was most influenced and fertilized by Roman civilization, shows naturally, therefore, the first higher industrial development and formation of town life, of movable property, and of the monetary system; above all else it shows the development of industry in the country also, in the villages. Hence here the early decay of the rural policy in the form of the old manorial system, the feudal

farm, and the villication; and in consequence of the dense population and the good local market no expansion of the small rural enterprise to one of larger proportions producing for a more extended market (be it a peasant farm on a large scale, as in the Northwest, or a farming estate, as in the Northeast), but rather an early beginning of free division, of mobilization, so to speak, of the soil.

The other two regions, on the contrary, remain for a long time agrarian, with insignificant industrial development, which is limited exclusively to the towns, and causes strict separation between town and country. The first region shows, however, at least the higher commercial development; hence here the timely development of the manorial system, which in the third district, in the highland of the Southeast, is barely beginning. Both, however, adhere to the principle of the closed, indivisible peasant farms. The first region, the lowland of Lower Germany, marks the great difference between Northwest and Northeast, a difference of a thousand years, due partly to a historical development and partly also, but less than is usually supposed, to a difference of soil and climate. The Northeast, being the youngest region, remains agrarian the longest, and consequently experiences what from the purely agrarian point of view is the most beneficial change, the natural transformation of the newer manorial system, with which its German history begins, into estate farming, likewise with closed farms.

Out of this diversity, this threefold or fourfold division of the rural system in the eighteenth century, arises a correspondingly different problem of the shaping of the emancipatory legislation, the freeing of the peasants, and the like, in the eighteenth and nineteenth centuries.

IV

There are three causes by which, as early as the eighteenth and still more in the nineteenth century, the varying degrees of dependence and subjection of the masses of the peasant population in Germany were made to appear more and more untenable, and which called forth the first attempts for their removal: first, the technical progress in the domain of agriculture, together with the

physiocratic overrating of the latter; then, springing from the same philosophical root of the law of nature, the ideas of enlightenment, of the rights of man; finally, in connection with this, the development of the modern state, with the demand for like political rights for all its citizens. The technical improvements could not be utilized in consequence of the more or less bad condition of the peasant and the constraint of his husbandry, due to the mixed lots with forced cultivation of the land and other compulsory services. The enlightenment, however, took offence chiefly at personal unfreedom, bondage; and this was as incompatible with the modern state as the vesting of lords with patrimonial police and judicial powers.

It was, therefore, a threefold liberation of the peasant that was demanded by the times: the agricultural, the personal, and the political. The peasant should everywhere become the unrestricted and personally free proprietor of his home and field, with full rights of citizenship. That was the goal of the emancipatory legislation, that the great social question of Germany in the eighteenth and the first half of the nineteenth century.

The entire emancipatory legislation consists of two parts: the breaking up of the old system of landlordship and labor by the emancipation of the peasants, and the breaking up of the old field system through equal distribution in the broadest sense of the word. The emancipation of the peasant freed him from every master whatsoever, from lord, patrimonial judge, or landed proprietor; the distribution of land freed him from his own kind, from his neighbors, from a master even when a neighbor in the field. By far the more important part socially is the emancipation of the peasants, which we will examine more closely. It consists, as above mentioned, first, in the removal of the agricultural dependence of the peasant on a master, through the annulment of the forced labor owed to the lord, patrimonial judge, or landed proprietor, the conversion of all inferior property rights to property, and the discharge of all burdens on the peasant farm; secondly, in the restoration of the personal freedom of the peasant by the removal of the older bondage and of the more recent hereditary subjection, which the eighteenth century fuses with the former;

thirdly, in the cancellation of judicial and police powers exercised by the patrimonial judge and the landed proprietor, and the granting of political rights to the peasantry. The last problem was everywhere in Germany pretty much the same; but the solution of the first two took a very different turn for the three or four groups which we have distinguished in the rural policy of the eighteenth century.

In the domain of the newer manorial system in the Northwest the second problem, that of the personal liberation, is almost entirely absent. We are here concerned chiefly with the restoration of unconditioned property out of the hereditary right to leasehold, and abolition of rather inconsiderable compulsory services to lord and patrimonial judge. Most of the duties of the peasants are here realty burdens, resting on the peasant farm. The emancipation of the peasants is, therefore, essentially the removal of realty burdens, that is, the conversion of all the remaining burdens to fixed rents payable in money, and the discharge of the latter by paying off to the creditor in one lump sum the principal with interest at a fixed rate.

In the domain of the older manorial system in the South the task is principally the elimination of the bondage which has existed from the Middle Ages, but which has changed to the form of rents; then the removal of the rather inconsiderable compulsory services rendered chiefly to the patrimonial judge; and likewise the discharge of the realty burdens where necessary, unencumbered property being here frequently met with already. It is only in the Southeast that bad and at times not even hereditary property rights must be converted into property.

In the South, primarily, but also in the Northwest, it is an antiquated system that is being displaced. In both regions it is a question of tithes in money or readily convertible into money; hence it would be easy to pay them off without essentially changing the economic status of the lords hitherto entitled to them. Consequently, the difficulty was here less economic than political. It was not so great in the North as in the South. The Southern nobility, mediatized at the beginning of the nineteenth century, threw special obstacles in the way of reform; in the North the

state had held the nobility in check since the Middle Ages. If in the West, especially the Southwest, where it was the rule or at least a frequent occurrence that several lords had rights in one peasant, the peasant had to be freed from them all, and this complicated the work of emancipation. Nowhere had the peasant come so completely under the unrestricted authority of one lord as in the domain of the estate farming.

In the Northeast, on the contrary, the chief problem is the elimination of the oppressive compulsory services and the conversion of the right of occupation, usually not even hereditary, into property. The personal unfreedom, the newly arisen hereditary subjection, is here not only obligation to pay all kinds of tithes, but an actual wholly personal slavery, consistently developed with a view to securing to the lord the entire available working force of the subject and of his whole family. He is in reality a piece of property of the lord. In addition we here face the problem, in contrast with that of the entire West, of abolishing a thoroughly modern condition: the unfree system of labor of the modern capitalistic management in agriculture on a large scale.

First of all, it became necessary, if the peasant was to be freed, to find an equivalent for his labor. It was labor, and not money, that engaged the attention of the beneficiary, whose entire economic existence was imperiled by the removal of this system, since he was not a person living on an income, but a producer, engaged in agricultural enterprise, who was not willing to stop his business immediately. The state was here confronted by an unusually difficult agricultural and social problem, consisting of the dissolution of the large estates or the providing of a free body of workmen in place of the unfree. Politically the task was not made easier, owing to the great significance which, in the young Prussian state at least, army and bureaucracy had in the eyes of the nobility.

In the Northeast, then, the work of emancipation was doubtless the most difficult, in the Northwest the easiest. It did not begin, however, as might be supposed, where it was easiest, but where it was most urgent, and that was precisely in the Northeast, where, up to the eighteenth century, conditions had steadily grown worse.

The development of this region was, in consequence, most independent. It was but indirectly influenced from abroad, while the West, especially the Southwest, first adopted and applied the new ideas from France, and was first and most profoundly shaken by the storms of the three French revolutions.

In spite of these differences two periods may be distinguished everywhere in the history of the emancipation of the peasants: the pre-Napoleonic and the post-Napoleonic, the eighteenth and the nineteenth century, separated by the great Revolution and the Napoleonic wars.

In the pre-Napoleonic period the enlightened absolute rulers, in spite of comprehensive plans, succeeded in making reforms only with their own peasants, the peasants of the domain, where they were at once sovereign and proprietor, patrimonial judge, or lord; but a real emancipation on an extensive scale took place only in the Northeast, in the old provinces of Prussia. Here the peasants of the domain were gradually made free property owners without obligatory services, not by the elimination of the large estates, as in Austria in the reign of Maria Theresa, but in consequence of the immediate financial assistance rendered by the Royal Treasury to the leaseholders of these large farms for the purchase of the necessary draught animals and of free labor. This is the great accomplishment which the old state of Prussia succeeded in making, at least in its essential features, before her deepest humiliation in the year 1806.

Again, in the post-Napoleonic period, it is the old Prussia which first undertook, by the famous Stein-Hardenberg legislation, the difficult task of personal as well as economic emancipation of the peasants, as a means to their spiritual regeneration. The kingdom wished, in the words of Hardenberg's memorial of 1807, "to adopt the aims of the Revolution while preserving morality and religion, and to realize democratic principles in a monarchical government." The abolition of hereditary subjection by the Edict of 1807, and the Regulation of Relations between Proprietor and Peasant (that is, the elimination of compulsory services and the transformation of conditional property rights to property) by the Edict of 1811 and the Declaration of 1816, made at least the

larger leasehold peasants that were susceptible of improvement free landowners, although they came into possession of only two thirds, or in some cases of one half of the land formerly tilled by them: the one third, or the other half, as the case might be, became the free property of the owners of the estates as indemnification. The problem, however, of providing free hired labor in place of the unfree compulsory labor for the large estates that continued to exist was solved by the Declaration of 1816 exclusively in the interest of the landed proprietors, by exempting the small peasants, such as the cotters, who were not capable of improvement, from this regulation as well as from that concerning the protection of the peasants. They could consequently be oppressed by the proprietors and converted into day laborers. All this is too well known, particularly since the great work of Knapp, to need here more than passing notice. It was left to the year 1848 to bring the emancipatory legislation to a conclusion, to complete the regulation, so far as possible, and to accomplish the cancellation of the realty burdens of those peasants, a minority, who enjoyed superior rights to property, and of the regulated peasants settled on crownland.

In contrast with this, the emancipation of private peasants was already accomplished in the most important region of the Northwest, in Hanover, in the thirties. At first it amounted to mere freedom from the private manorial system, while the public right of the state and the particular private right of the peasants, including inheritance, remained in force. The former was not abolished by the Prussian laws until in the seventies; the latter was replaced by the optional right of inheritance in the law relating to peasant farms.

In the South (and in Central Germany), however, only personal emancipation resulted at first from the new constitutions, enacted as a part of the general political development. The economic emancipation, on the contrary, was here first set in motion by the Revolution of July, and was achieved, at least in its main features, by the year 1848. The later this process took place, the more thorough and advantageous it was for the peasant. Capitalization of their realty burdens was lower than in the Northwest and the

Northeast, and the state aided in the discharge of these burdens without exacting indemnity in land.

Where emancipation from patrimonial authority was obtained at all, it did not as a rule come earlier than the year 1848; but it was not enacted everywhere.

It is not possible to describe here further the technical measures enacted in connection with the emancipation of the peasants. These measures were aimed at the removal of the entailed field system of the Middle Ages and the establishment of the rule of general distribution of land in the broadest sense, that is, the abolition of patrimonial jurisdiction, and the gathering together or the redistribution of landed property. Nor is it possible to show how these measures assumed different forms in the different great domains in consequence of the varying rural policy and the tripartite physical division.

V

The net results of the entire work of emancipation, as we see it in the second half of the nineteenth century, are, in the main, everywhere the same; and the effect, particularly where comprehensive technical reforms were enacted together with those of a legal and economic nature, has everywhere been an extraordinary growth of German agriculture. But the fundamental character of the rural policy of Germany at the end of the eighteenth century has not been altered by the emancipatory legislation: the agrarian dualism then in existence, the great contrast between the Germany east of the Elbe and the Germany west of the Elbe, has not been softened, but, on the contrary, considerably intensified. For in the Northwest a few of the sparse large farms have been broken up; in the Northeast nowhere, if we leave out of account the parts of Schleswig-Holstein belonging to it. Here, as a direct consequence of the emancipation of the peasants, the number of positions for peasants has been reduced, and the peasant land even further diminished. In the old provinces of Prussia, the principal region of the Northeast, the liberation of the peasants has not only given new impetus to the formation, out of the peasant land, of large estates characteristic of the Northeast, but

positively encouraged and accelerated it, in spite of the temporary check received through the protection given the peasants by Frederick the Great. This has been due partly to the repeal of the law enacted for the protection of the peasants, so far as it affected that part of them excluded in 1816 from its operation, and partly to the rule of indemnity in land. In solving the peasant problem of that time, therefore, it has created simultaneously the question of rural labor.

Many of the regulated farmsteads, which could not in after times maintain themselves, were bought up by the great estates. Moreover, the restoration of free transfer of land in Prussia was by no means complete. It halted before the estates in tail and the rights of creditors of mortgaged farms. Encroachment on the large estate was, therefore, rendered impossible, although demanded by the general agricultural development and the growth of the population. The license of parceling out the land was in reality available only for the peasant property, which had, up to the time of the legislation concerning estates held in perpetuity with fixed rentals, been steadily reduced in the Northeast by selling the land undivided or by parceling it out to small farmers.

On the other hand, the introduction of the right of free divisibility and of the Roman common law of heredity, bestowing equal rights on all children, together with the right of encumbrance, has led, in nearly all the branches of rural life, to an ever increasing burdening of the peasantry with the hereditary indebtedness resulting from the division of the land. It has not brought about an actual division of the land, nor an indebtedness as high as that prevailing in the case of the large estates; but this indebtedness rises, at least in the Northeast, to alarming proportions.

The conviction of the importance of a numerous thriving peasantry for the state and for political economy is stronger today than at the time of the emancipation. The peasants are important not only from the financial, military, and social point of view, but from the physical, in their relation to public health and the renewal of the urban population. The present agrarian crisis has shown that the peasant industry has greater power of resistance than the large enterprise, or that it is at least able to compete

with it; while the growth of the population and the general economic progress demand a reduction in the size and an increase in the number of agricultural industries.

Owing to this a reaction has recently set in against the agrarian legislation of the third epoch, a legislation accomplishing nothing but freedom and disintegration. We are standing at the beginning of a new era of agrarian policy, which, following in the wake of the emancipatory legislation, faces the twofold task of what the latter has overdone and what it has failed to do: maintenance, in its present status, of the freed peasantry; and improvement of it where the described historical process before the emancipation, and the emancipation itself, have decimated it so extensively, in the parts of the empire east of the Elbe. And since maintenance is so much easier than restoration, the first task of modern agrarian policy is the maintaining of the peasantry where it is endangered, first of all, therefore, but by no means solely, in the Northeast; and the most effective means for preventing an increase of debt in the way of hereditary succession is the return to a certain entail in the interest of public policy, the introduction of the intestate right of inheritance for all those regions in which the closed farm, in spite of the emancipatory legislation, has remained the rule, because the foundations of free divisibility of the Southwest, the intensive industrial development in the country, are absent.

An additional and no less important task of the German and particularly of the Prussian agrarian policy of the present, affecting the entire economic life of the German Empire, will be the increase of the peasantry in the Northeast, on a large scale, to be accomplished by the state itself through a colonization from within, a "Westernizing of the Northeast," as Knapp calls it. But the described historical course of development enables us to determine to what limits this new colonization of the Northeast must be confined to be organic and capable of living. If the three forms of rural policy of the Southwest, the Northwest, and the Northeast appear to us like so many historical epochs and stages of development, following one another successively, as conditioned by the topography of the different regions, it is clear that the aim

of this inner colonization can only be the application of the rural system of the Northwest to that of the Northeast, beginning with the transitional domains, such as the Altmark or the province of Saxony: the establishment, therefore, of larger closed peasant farms intermingled with large estates, but not of small peasant farms with free divisibility as in the Southwest. The Westernizing can therefore be only a Northwesternizing, never a Southwesternizing. For only historical differences, such as exist between the Northwest and the Northeast, can be permanently bridged over by artificial governmental measures, but not natural differences, like that between the lowland of Northern Germany and the mountainous region of Central Germany. Although in the modern political economy industrial development has, in consequence of the improvement in means of communication and in manufactures, become more independent of the configuration of the land, and is frequently attracted by commercial centers, this deep-seated difference can never be wholly obliterated. The most recent development, with the increasing importance of electricity, takes industry back again to the natural water powers.

The significance of this domestic colonization is great enough for the entire political economy of the German Empire. It means, on the one hand, the only possible cure for the present agrarian crisis, by means of compulsory liquidation of the large farming estates which are most in debt; on the other hand, a solution of the question of rural labor, by keeping in the country the workingmen who now emigrate, and finally an outlet for the surplus population of the Southwest, and thus the elimination of the threatening excessive division of landed property. Already natives of Baden and Württemberg have found a new home in the distant Northeast. It is a particularly fascinating problem of the domestic colonization, that human material of the Southwest is to give to the Northeast the rural system of the Northwest. If we thus succeed in stopping the flight from the country to the city, and from the East to the West, there will result a retardation if not a suspension of the growth of the large cities and of the development to the industrial state, the rapid pace of which has in

these later days begun to fill the farther-sighted political economists with increasing apprehension. This is the full meaning of the domestic colonization, this the great task of the new epoch of agrarian policy, the threshold of which we have already crossed.

The knowledge of the past is a source of counsel and instruction for the present, of comfort and hope for the future.

B. AMERICAN

THE DISPOSITION OF OUR PUBLIC LANDS

By Albert Bushnell Hart

(From the *Quarterly Journal of Economics*, Vol. I, pp. 169–251, January, 1887)

JANUARY 25, 1785, General George Washington wrote a letter in which occurs the following passage: "There being no settlement or appropriations (of land) (except the reservation in favor of the Virginia line of the army), to my knowledge, in all the country northwest of the Ohio." In 1883, according to an official publication of the Public Land Commission, there were "purely arable lands remaining in the West (estimated), five million acres," and "the movement westward in search of free government lands must soon cease." No more timely and interesting service could be performed than to consider the probable effect of the impending change. For a century our political, economic, and social relations have been sensibly affected by the nearness, accessibility, and cheapness of government land. The population of the country has at last overtaken our unsettled domain. Henceforth our conditions must be more like those of old and crowded countries. The nation has had, enjoyed, and spent a part of its heritage, and can never recover it.

To speculate upon the future is, however, more difficult and less profitable than to consider the mistakes of the past. The present article is an attempt to show how it comes about that the arable lands of the United States government are on the verge of exhaustion. Three questions will be considered in turn, — the acquisition of the lands, their disposition, and the policy of the government.

. . . The government of the United States acquired territory in three different aspects. As a general government, it exercises

jurisdiction over all the area included within the boundaries of the United States; as a government, it controls, or provides for the control of, that part of the national territory not organized into states; as a landholder, it owns large tracts of lands within both states and territories. . . . The Congress of the United States went into the business of governing the nation March 1, 1781, with 819,815 square miles of territory; and this area was acknowledged to belong to the United States by the treaty of 1783. The first increase of territory came in 1803. The Interior Department has committed itself, in its lands and census publications, to the statement that the Louisiana purchase of that year included Oregon. It is more in accordance with the historic truth to say that our title to Oregon south of the Columbia dates from the Lewis and Clarke expedition of 1805. The United States, therefore, secured 877,268 square miles in 1803, and 225,948 square miles in 1805. In 1812, acts of Congress extended our jurisdiction over about 9740 square miles, claimed by Spain, in west Florida. The Florida purchase of 1819 added 54,240 square miles. Texas brought us 262,290 square miles in 1845. Here, again, the government publications conflict with history. New Mexico was never a part of Texas, and our title to that region rests upon the same basis as that to California: it was a part of the 58,880 square miles north of the Columbia acknowledged by England. In 1853 we bought 47,330 square miles of Mexico. Finally, in 1867, Russia ceded to us Alaska, with 3,501,509 square miles. To speak in round numbers, the original area of the United States was doubled by the Louisiana cession; almost as much was added out of Mexican territory; and Oregon and Alaska together make up the fourth quarter of the present area.

The area embraced in the territories has varied almost from year to year. Between the years 1784 and 1802, cessions by the states had given to the United States 405,482 square miles; but, besides two little tracts ceded by the United States to Pennsylvania and Georgia, the creation of new states, beginning with Tennessee in 1796, withdrew large regions from the territorial status. Each annexation increased the territories for the time being; each admission of a state again reduced it. At present

the territories cover 1,466,257 square miles, and the states 2,040,252. Since 1820 the area of the states taken together has never been very far from one-half of the total area of the whole United States.

That part of the land within our boundaries which belongs to the nation has by the Land Office been named the public domain. The area is a ratio having two variables: at intervals it is increased by cessions or annexations; every year since 1799 it has been diminished by sale or gift. At the beginning of the existence of the Confederation, in 1781, the government did not control or own a single acre of land. Every part of the United States was claimed by some state, and there were regions covered by two or even three claims. With all its defects and its imbecility, the Confederation did one great service to the nation and to posterity: it succeeded in prevailing upon a number of the states to waive their claims in behalf of the general government. March 1, 1784, the cession of Virginia gave to the United States undisputed title to a large part of the region north of the Ohio River. The previous cession of New York and the later cessions of Massachusetts and Connecticut, in 1785 and 1786, completed the title to the vast tract now occupied by six populous states. In the South the process was slower. South Carolina ceded her claim in 1787, North Carolina in 1790. It was not till 1802 that Georgia released her hold upon the region now taken up by the states of Alabama and Mississippi.

An inspection of Table I[1] will show that the United States received title to less land than was included in the cessions. In every case there were reservations. Thus Connecticut kept for herself the Western Reserve. Virginia liberally provided a bounty tract for her Revolutionary soldiers, north of the Ohio River. North Carolina, with a great flourish of trumpets, yielded the region now included within the state of Tennessee; but it was found later that the whole region was covered by state land warrants, so that the United States never held an acre. In addition to the reservations for the benefit of states and their

[1] Table will be found in the original article in the *Quarterly Journal of Economics*, Vol. I, pp. 169–251, January, 1887.

protégés, every tract which has come to the government has been reduced by the claims of previous residents. The policy of the government has been to leave undisturbed actual occupants of small estates and to construe liberally the grants of previous governments. The Indian occupancy has always been recognized as something which must be purchased before the United States gained full title. Texas retained the whole body of public lands within her limits. With these two exceptions, the United States has since 1802 had to consider only private claims. As more than one-half of the whole territory (1,865,457 out of 3,501,509 square miles) has once been Spanish, the land titles under the grants and laws of Spain have been a troublesome thorn in the flesh of successive land commissioners. No exact record appears of the precise quantities of land confirmed to claimants in California, New Mexico, Louisiana, and Florida, but upwards of fifty thousand square miles have doubtless never entered the public domain. The general policy of the government is to require a claimant to prove his title. Great hardship has often ensued, and many grants are still unconfirmed by the United States.

If the government had never parted with any of the lands to which it had undoubted title, we should now have a patrimony of 2,708,388 square miles. This area is but little less than that of the whole United States, excluding Alaska. The fourth column of Table I [1] shows the amount of land in possession of the United States from year to year. It will be noticed that since 1803 we have had more land than exclusive territory. A very considerable part of the public domain lies therefore within the limits of states. Another significant fact, shown by the same table,[1] is the rapid melting away of the area gained by each cession since 1805. We had less land in 1846 than before the Florida and final Oregon annexations; the area of Alaska barely made good the acreage lost since 1848, and a new Texas would not much more than restore the public lands parted with since 1867. Let us look more closely into the process by which the United States has divested itself of more than a million square miles.

[1] See footnote on page 256.

. . . The history of the public lands happens to fall into five tolerably distinct periods, each of about twenty years. From 1784 to 1801 the policy of the government was to sell lands in large quantities by special contract; the result was an average sale of less than one hundred thousand acres yearly. In 1800 was inaugurated a new system of sales, in small lots, on credit; about eighteen millions of acres were thus taken, but more than two and a half millions subsequently reverted to the government under relief acts. In the middle of 1820 began a system of sales for cash, in lots to suit purchasers. Seventy-six million acres were sold in twenty years; but the half of this quantity went in the two years preceding the panic of 1837. After that revulsion the pre-emption system was adopted, by which the most desirable lands were reserved for actual settlers, at a low price. Except in the years 1856–1857 the sales were steady and kept pace with the growth of the West. The homestead system carried the principle of land for the landless still further, and cut down cash sales to an average of a million acres a year. Since 1880, pre-emptions have been resorted to again, in many cases for fraudulent purposes. At present lands are classified by the Land Office as agricultural, saline, town site, mineral, coal, stone and timber, and desert lands. From 1854 to 1862 there was a further class of "graduated lands." These were tracts which had long remained unsold, and were offered to abutters at very low prices. The minimum price for ordinary lands has for many years been $1.25 per acre. Timber lands and lands reserved from railroad land-grants are sold at the "double minimum" of $2.50 an acre; mineral lands are valued at $2.50 and $5 an acre; coal lands, at $10 and $20 an acre.

It would seem, therefore, as though the sale of a hundred and ninety-two million acres must have brought in a handsome sum to the government. As long ago as 1787 Thomas Jefferson wrote: "I am very much pleased that our Western lands sell so successfully. I turn to this precious resource as that which will, in every event, liberate us from our domestic debt, and perhaps, too, from our foreign one." It is true that the proceeds of the public lands did eventually wipe out the last vestiges of the debt which had existed in 1787. It is true that the lands had, up to

June 30, 1883, brought into the Treasury of the United States the smart amount of two hundred and thirty-three million dollars. It is also true that, except for the period from 1830 to 1840, the lands have been a drain upon, and not a resource of, our finances. At the end of the financial year 1882–1883, the government was out of pocket, so far as cash outlay and receipts are measures of the value of the lands, in the sum of $126,428,484.89. The first great item of expense is the extinguishment of the Indian title to ownership. Since 1781 the United States government has recognized the right of occupancy, but has asserted its sole prerogative to acquire Indian lands. First and last, up to the end of the fiscal year 1882–1883, it had paid two hundred and nine millions of dollars for the interest of the Indian in his lands. There have been grave acts of injustice in the manner of negotiation and of payment, but no inferior race ever received more consideration at the hands of the treaty-making power. The Indians are still in possession of reservations comprising some of the most favored lands in the West and embracing more than a hundred and fifty million acres of land. A second source of expense has been the purchase-money paid for all the annexations since 1802, except that of Oregon. The items taken together make an outlay of upwards of eighty-eight millions. Surveys and expenses of disposition add fifty-five millions. If a strict account were to be made up, there should be added a proportion of the general expenses of maintaining the government, and the whole cost of the Mexican War.

Unsatisfactory as is the financial result of our public-land policy, we must reflect that the sales account for but little more than a fourth part of the total disposition. Perhaps we shall find the remainder so used as to give some indirect benefit which cannot be reckoned in dollars and cents. . . . In the first four decades two sorts of grants are apparent. In 1796, and later, provision was made for the fulfillment of long-standing promises to the Revolutionary troops and to the Canadian refugees who had taken sides with the patriots. At the same time Congress made gifts of small tracts of land to individuals who had performed special services to the republic. Thus Lafayette received

a township of land in 1824; and in 1843 a square mile was voted to one Lowe for "his gallantry and peril in the rescue of an American brig from the hands of pirates." A very few grants were made to educational and charitable institutions. Thus Jefferson College, Mississippi, and the deaf and dumb asylums of Kentucky and Connecticut were each endowed with a township. Congress has always shown a singular moderation in making special grants, perhaps because its general gifts were so magnificent. Of the ten million acres given away, down to 1840, the greater part was in reward for services in the Revolutionary War and the War of 1812. For services in the Mexican War, the government appropriated about sixty millions of acres. Another form of gift is the so-called "donations." From 1842 to 1854, acts were passed granting quarter sections of land to actual settlers who would reside on dangerous frontiers. About three millions of acres have been claimed under these conditions. The homestead acts of 1862 introduced a new principle into the public-land system: it provided not only for the reservation of land for actual settlers, but it proposed to give the land to all heads of families, citizens of the United States or intending to become such. The effect of the act has been threefold. Under its provisions and those of the similar timber-culture act of 1873, immigration has been stimulated, the revenue from the lands has been comparatively little, and ninety millions of acres have passed from the public domain into private hands. In some respects the rapid settlement of the West, which has been greatly favored by the generous policy of the government, has undoubtedly conduced to the welfare of the country, and has made possible our elaborate systems of transportation and distribution on a large scale. It is, nevertheless, a question whether the present generation, as well as posterity, might not have been equally prosperous if the government had made the conditions of acquirement more rigorous.

To ascribe the depletion of our reserves of land to the bounty and homestead acts is unjust: the United States has given to the states almost as much as to individuals. Most of the original sixteen states (including Vermont, Kentucky, and Tennessee) were in possession of unoccupied lands in 1802. The new states, as

they have been admitted, have received large gifts of three kinds. To most of them have been granted from one to six townships of saline lands, — an aggregate of half a million acres. For all admitted to the Union previous to 1850, have been reserved one thirty-sixth of the public domain within their limits, for school purposes. The fortunate states which have come in since 1850 receive an eighteenth; and a like amount is reserved in each of the territories, except the Indian Territory and Alaska. The total thus set aside is about sixty-eight million acres. For each of the new states and territories has also been reserved a tract of from two to four townships for a university, — a total of more than a million. In 1862 Congress granted to each state in the Union lands proportioned to its representation in Congress, for an agricultural college. Nearly ten million acres were thus appropriated. It is at least doubtful whether a system of endowed public schools is desirable. Many of the states have squandered, lost, or misused the lands acquired for educational purposes. In others the people decline to tax themselves for school purposes, and rely wholly on the fund. But it is even worse with other forms of grants to states. In 1841, a time of reckless disposition of the lands, a grant of five hundred thousand acres was made to seventeen of the states, for internal improvements. The largest single gift made to the states at one time was included in the swamp land grants of 1849 and subsequent years. All the "swamp and overflowed lands" within the limits of any state were granted to that state. It was expected that the sale of a part would pay the expense of reclaiming the whole. It does not appear that any great improvements have been made by the states; and the United States is now spending large sums in building levees, to protect regions presented to the states in 1850.

Throughout the history of the country there has prevailed the double error that a gift of land cost the government nothing and was of very great value to the recipient. Upon the land that is of any worth the United States has spent money for surveys and administration; and the states and other grantees have found it hard to turn the gifts into money. A great part of the educational grants have realized not more than a dollar an acre.

It would in many respects be preferable for the government to appropriate the proceeds of the lands rather than to give the disposal of the soil to the states. A distribution act was passed in 1841, by which the net amount received for public lands was to be paid to the states; but it was repealed so speedily that only about seven hundred thousand dollars were thus distributed. A much larger sum has accumulated, and has been paid to the states under the "two-, three-, and five-per-cent funds." By agreement with each state as it has entered the Union the United States consents to pay over a proportion of the net proceeds of the lands within that state. More than seven million dollars have been allowed under this provision. The deduction is not strictly a gift, since the states in return bind themselves not to tax public land till it has been five years in the hands of a private owner.

In theory the lands appropriated for internal improvements of various kinds have also been sacrificed, in order to make the remainder more valuable. The Ohio five-per-cent fund in 1802 was intended to be applied to the construction of the Cumberland road, which was to be the great avenue for purchasers and settlers from the Atlantic coast. This was the beginning of the system of internal improvement at the expense of the nation; but in practice Congress built the road out of general funds. It was not till 1827, four years after the first river and harbor bill, that direct grants of lands were made in aid of internal improvements. The new and momentous policy began with grants for canals. Between 1827 and 1850 about three million acres had been appropriated to this purpose, principally to secure the completion of the system connecting the Lakes with the Ohio and Mississippi. The jealousy caused by the action of Congress brought about the comprehensive grant of five hundred thousand acres to each "public-land state," to which we have already referred. But the most familiar forms of grants for internal improvements date from 1850. By that year the railroad system had been extended so far west as to penetrate large tracts of unsold lands. Congress aided the extension of the system by assigning to the states of Illinois, Alabama, and Mississippi nearly four million acres, to

be used toward the construction of the Illinois Central and the Mobile and Ohio lines, reaching from Chicago to the Gulf. Between 1850 and 1872 about eighty similar land-grants were made. The principal lines of communication in Minnesota and Iowa, and important roads in Wisconsin, Illinois, Missouri, Arkansas, Louisiana, Alabama, Mississippi, and Florida were subsidized. In 1862 a new problem presented itself. It became a political necessity to lay a line of railroad across the continent. Between Iowa and California there were no states to which the grant could pass. Congress, therefore, promised a subsidy to corporations which undertook to build the road.

In the ten years following, some twenty-three similar grants were made, in almost all cases for roads running east and west, and intended to form links in transcontinental lines. To satisfy the terms of the acts, about one hundred and fifty-five millions of acres would be necessary. Several companies never built their roads, and earned no grant; others completed the work after the prescribed time. In a few cases Congress has formally declared the grant void, and has restored the land to the public domain. In 1883 nearly the whole area was at least withdrawn from settlement, pending a legal return to the full control of the government; but only forty-seven millions of acres had been formally patented to the states and companies. A few grants for canals and for wagon roads, between the years 1863 and 1872, make up the three remaining millions of the grand total promised by the government, — a total of a hundred and sixty-one millions of acres.

To express the disposition of the public lands in familiar terms, the United States has parted with a tract equal to its whole area east of the Mississippi River, added to the states of Missouri, Iowa, and Minnesota (west of the river). The acreage sold is a little more than the combined areas of the New England and Middle States, with Ohio, Indiana, and Michigan. The coast states from Delaware to Florida (including Maryland) represent the area of gifts to individuals. The remainder of the South, east of the Mississippi, closely approximates to the area of grants to states. The remainder of the Northwest, with Missouri, Iowa, and Minnesota, may stand for the internal improvement grants.

Yet so vast is the area of the country that the government might repeat its sales and gratuities, acre for acre, without exhausting its reserves of land in the West alone. In spite of the fact that the states had in the beginning, or have retained, five hundred million acres, and that the United States has parted with six hundred and eighty million acres, the public domain still comprises upwards of a thousand million acres. The real significance of the present alarm about the disappearance of the public lands, lies in the fact that the greater part of the unsold lands are either reserved for the Indians or are unfit for ordinary tillage. Upon the best vacant lands, — amounting to about a hundred and fifty millions of acres, — the Indians are now seated. The area can be reduced by judicious and costly treaties; but it amounts only to about five hundred acres per head, and if the occupants should take up land in severalty, they could not be dispossessed without such injustice as would rouse the nation. Experts in the Land Office assure us that, making all deductions and allowances, the remaining lands are worth upwards of a thousand millions of dollars. There is no evidence in the past policy of the government for believing that we shall actually net one-tenth of that amount. The greater part of the region is officially classified as "Desert Lands," and is for sale in tracts of six hundred and forty acres, at a dollar and a quarter an acre. Nothing but the temporary increase of pre-emption enables the Land Office at present to pay its running expenses out of income. The golden time is past; our agricultural land is gone; our timber lands are fast going; our coal and mineral lands will be snapped up as fast as they prove valuable. There is no great national reserve left in the public lands, unless there should be a change of policy. Should disaster overtake us, we must depend, like other nations, on the wealth of the people, and not on that of the government.

It is, of course, true that the lands are still in existence, and have been made many times more valuable by the labor of the occupants. It is further true that large quantities of land are for sale by the railroads and other grantees. There is no immediate danger of a land famine. There is abundant cause for criticism of the system adopted by the United States, but it should

rightfully be directed rather against the manner in which the laws have worked than against their purpose. Since 1841 the lands have nominally been reserved for actual settlers; but practice has shown grave defects in the settlement laws, — defects which Congress has no will to remedy. No man can legally pre-empt land or take up a homestead more than once. The privilege is very difficult to guard, and perjury and fraud are alarmingly frequent. No man can legally acquire more than eleven hundred and twenty acres of land, in the West, from the government; a hundred and sixty acres each as a pre-emption, as a homestead, and as a tree claim, and a section as a desert-land claim. Actually, single individuals and companies own large estates which a few years ago were in the hands of the government.

The accumulation of the large tracts is often brought about by fraud, but much oftener through the mistaken generosity of the government or through defective land laws. It is not always necessary to hire men fraudulently to take up land for the company. In Texas the state has sold its lands in its own way, often in large blocks. The school-lands and the scrip for bounty warrants have legally been used for locating wide-extending estates. The railroad lands, although not in compact tracts, can be used as a nucleus for a large accumulation: and, in a country where land is cheap and money dear, the patient, long-headed capitalist can buy up valuable claims in a legitimate manner. The chief source of the present trouble in the West lies in the fact that the government never recognized that grazing land must be sold and occupied under different conditions from ordinary arable lands. The first comers have been allowed to take up the water-fronts. Any comprehensive system of irrigation of large areas for the benefit of future land-seekers has thus been forever prevented. The possessor of the rivers and water-holes has gained control of the country behind his claim. In such a contest the largest and richest concerns have a great advantage. There was a time when the government might have laid out, for sale or lease, large tracts of grazing lands, each with a sufficient water-front. It is now too late.

The fundamental criticism upon our public-land policy is not that we have sold our lands cheap, not that we have freely given

them away, but that the gifts have in too many cases inured to the benefit of those whom the government meant to ignore. The land-grabber is, in most cases, simply taking advantage of the chances which a defective system has cast in the way of shrewd and forehanded or unscrupulous men. The difficulty is certainly not in the Land Office, which, in the midst of perplexing complications, has striven hard to protect our lands. The fault lies at the door of the Congress of the United States, which has the power, but not the will, to correct notorious defects in our system. Still further back, the fault is with the free citizens of the republic, who have been too busy to insist that there should be a comprehensive land policy, providing for the equitable disposition of all classes of the public lands.

SOUTHERN AGRICULTURE, 1790–1860

By M. B. Hammond

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IMPORTANT as were the changes in spinning and weaving cotton brought about by the introduction of machinery and the establishment of the factory system, and great as was the influence of the saw-gin on the development of the cotton industry, these discoveries and appliances in the mechanical arts do not suffice in themselves to explain the remarkable expansion of this industry during the succeeding years. Back of the machine production, although greatly stimulated thereby, lay the demand for cotton goods originating in the fashionable tastes of the higher classes, but continuing in popularity when increased supplies of raw material and cheaper modes of production had brought these fashionable fabrics within the reach of the humbler members of society. So, behind the invention of the saw-gin lay the forces which really determined the supply side of the question. These forces were the energy of the Southern people, the suitability of their climate for cotton production, and most important of all, the wide area within the Southern States on which cotton could be successfully grown. The failure of the saw-gin to come into general or even extensive use in India and the other cotton-producing countries, shows that something more than its invention is necessary to explain the wonderful development of the American cotton culture and trade during the succeeding century. The invention of the saw-gin was only the unlocking of the door of a great storehouse of cotton, so that all the world might draw from its seemingly unlimited stock the material for its clothing.

In 1793, when the invention of the saw-gin had removed the last obstacle to the spread of cotton culture throughout the South,

the cultivation of this plant was still confined almost entirely to the tide-water region of the states of Virginia, Maryland, Georgia and the Carolinas. Even within this region its culture was by no means general. The greatest production came from the southern portion, especially from Georgia, where the sea-island or long-staple variety had been introduced seven years before. But, although it excelled all other varieties as a marketable commodity, the sea-island cotton was subject to narrow geographical limitations, and all efforts to produce it at a distance from the seacoast proved futile. The upland planters, therefore, found themselves restricted to the cultivation of the green-seed cotton, a short-staple variety, but little known to Southern planters previous to the Revolution. This variety of cotton seems to be the result of a crossing of the *Herbaceum*, of Eastern origin, with the *Hirsutum*, probably of Western origin. Experiments made with its cultivation had already shown it to have advantages over the black-seed varieties as respects yield and method of cultivation, and Whitney's invention had at last removed the only hindrance which, since the Revolution, had prevented the planters from producing it as a marketable commodity. From Augusta as a center and chief market the culture of the short-staple cotton spread throughout the upland districts of Georgia and South Carolina. For more than a quarter of a century this continued to be the principal cotton-producing region of the country; as late as 1820 over one-half of the entire crop grown was raised in these two states alone.

The success of the cotton growers of Georgia and South Carolina now led the states to the north of them, Virginia and North Carolina, to attempt the production of this staple. Miller and Whitney sold their patent right to the saw-gin within the state of North Carolina to that state in December, 1802. At this time the culture of cotton had made but little progress within this state. But although the production of the staple continued to increase in both North Carolina and Virginia, its culture made no such rapid progress as in the states to the south and west of them. There was comparatively little land suited to the production of cotton, and the climate was less propitious than it was farther south. The danger that the frosts would come before the plant

reached maturity made cotton growing a hazardous undertaking, and when the price sank below ten or twelve cents a pound, the cotton crops of both these states showed an immediate falling off. By 1860 the cotton area of Virginia was confined to eight or ten counties lying in the southeastern corner of the state. In North Carolina the principal seat of cotton growing was on the long-leaf-pine lands extending through the middle of the state from north to south.

Cotton culture seems to have begun in Tennessee almost coincident with the admission of that state into the Union. As early as July, 1797, Mr. Miller, of the firm of Miller and Whitney, proposed to his partner that they send an agent to Knoxville, "where we were informed that cotton was valuable," and to Nashville and the Cumberland settlements, to gather information concerning the culture of cotton in these parts and the mode of cleaning it. On the return of the agent through the "back parts of Virginia," he was to look for an inland market for the consumption of cotton cleaned by the saw-gin. By the beginning of the century the culture of cotton in Tennessee had attained such importance that public meetings of the citizens were called at various places to petition the legislature to purchase of Miller and Whitney their patent right to the saw-gin within the limits of Tennessee. At one of these meetings held in Nashville, July 21, 1802, General Andrew Jackson presided. In accordance with the desire of the petitioners, the legislature of Tennessee in 1803 purchased of Miller and Whitney the right to use the saw-gin within the state limits. Cotton production in this state, with the exception of a few years in the '40's, continued to increase at a uniform rate until the outbreak of the Civil War.

Although cotton had been cultivated in the great territory of Louisiana even before its purchase by the United States, little attention had been given to the western lands until after 1820. Cotton was still supposed to be the staple of the uplands. But in the decade ending with 1830, the superiority of the prairie lands and river bottoms for cotton growing began to be appreciated, and by 1830 the western country had outstripped the Eastern states in cotton production. It was in the following decade, however, that

cotton cultivation in the United States received its most rapid extension from the settlement of the western lands. The movement of slave holders and their property to central Alabama and to the Mississippi river bottoms we have already mentioned. A perfect mania for cotton raising and for speculation in western lands had seized hold of the people during these years.

This speculative tendency was greatly fostered by the operations of the state banks, which were established in this region after the downfall of the United States Bank. The facility with which these banks granted loans gave an unnatural stimulus to the purchase of farming lands and to the extension of cotton growing. The new settlers in the western country took up large tracts of land, which, together with their negroes, they mortgaged to the new banks for loans with which to carry on their planting industry, and then turned over to the banks the cotton which they harvested. Trusting in the high prices of cotton, the banks advanced funds far beyond what wisdom dictated, sometimes advancing as much as fifteen cents per pound. In 1836–1837 came a great collapse in prices, followed by a period of bank failures and of distress for the new planters who were unable to obtain further advances for continuing their agricultural operations. Within a period of three years fifty-five million dollars had been applied to the cultivation of lands in the new cotton states, and the production of cotton in these states had nearly doubled.

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The possibilities of Texas as a cotton-growing region were fully appreciated even before that vast territory had become a part of the Union. The most notable increase in cotton production between 1850 and 1860 came from this state, but the sparse population prevented it from surpassing the Mississippi country as a cotton-producing region previous to the Civil War.

By 1850 all the territory through which the cotton belt now passes had been acquired by the United States, and the outline of the cotton belt, almost as it has since remained, was already to be traced. Some counties (especially in Texas and Arkansas) which did not then produce cotton now do so, and in all of the states the acreage and production of many counties have greatly

increased, and yet the boundaries of the cotton belt have been pushed comparatively little beyond what they were in 1850. In the new states west of the Mississippi the cotton region lay entirely to the south of the isothermal line for mean summer temperature. East of the river it extended north of this line, which passed through northern Alabama and Georgia and middle South Carolina. The area of chief production began in southeastern Virginia, and, usually avoiding the coast, passed through the central portions of the Carolinas, Georgia, Alabama and Mississippi, then widened to the northward and embraced northern Louisiana and southern Arkansas, and ended in the central portion of the great state of Texas.

It will doubtless surprise many readers to learn that notwithstanding this vast area within which cotton was the leading staple cultivated, the actual acreage devoted to this crop at any time previous to the Civil War was very small. The crop of 1859–1860, which was by far the largest that had ever been produced, being in excess of 2,000,000,000 pounds, was raised on an acreage less than that included within the boundaries of South Carolina, even when the most liberal estimate of the cotton acreage is accepted.

In 1836, when cotton cultivation had begun to extend beyond the Mississippi, Woodbury's report, estimating the production per acre at a little less than 250 pounds, considered the whole amount of land then devoted to cotton raising to be not far from 2,000,000 acres. From calculations made on the basis of the census of 1840, De Bow estimated the number of acres devoted to the cultivation of cotton at 4,500,000, and in 1850, as superintendent of the Seventh Census, he estimated the cotton area at 5,000,000 acres. The census of 1860 estimated the large crop of cotton grown that year to be the product of 6,968,498 acres, but as already mentioned, later and more careful estimates nearly double the acreage. It is quite probable that the estimates of early years were also too conservative, and that the entire acreage was larger than it was then supposed to be. But even if the later estimate of 13,000,000 acres for 1860 be allowed, we still find the total acreage to have

been less than four per cent of the landed area of the ten great cotton states. Nearly all the tillable land in these states was capable of cotton production, and yet the demand for more land for the cultivation of this staple constituted the basis of the Southern clamor for an extension of the federal domain.

. . . The colonial system was the only system in vogue when the era of cotton culture began, and the cultivation of this plant therefore came under the same unfortunate methods of farming as were pursued in the culture of the other Southern staples. Only in the sea-island-cotton-producing districts was there any notable improvement in agricultural methods due to the introduction and extension of cotton culture. Early experiments in the culture of this variety of cotton showed that its price was greatly heightened by improvements in its quality, and this fact led the planters of the long-staple cotton to use great care in the selection of the seed and in the subsequent cultivation of the plant. Throughout the great cotton belt, however, where either the upland or New Orleans cotton was cultivated, but little attention was given to methods of agriculture, that method being considered the most profitable which raised the largest crop with the least trouble to the planter.

The method of clearing cotton lands, while not characteristic of the Southern States alone, and, considering the abundance of timber and the scarcity of labor in the early years, often justifiable, seems to the scientific agriculturist a very wasteful one. Weak handed planters in selecting a site for a plantation in a timbered region first cut through the bark a ring around the larger trees. This caused the trees to die. The smaller trees were at once cut down and burned, and the ground broken up and planted. In a few seasons the wind would blow down the deadened trees, which would then be rolled together in log heaps and also burned. Usually a few crops of Indian corn or wheat would be taken off the land before the fields were ready for cotton.

The methods of planting and cultivating cotton while slavery continued were very simple, and with few variations were the same throughout the South. After preparing the land for cultivation by breaking down the cotton or corn stalks of the previous

year, the field was laid off in beds by plowing a furrow between the old rows and lapping on this from four to six other furrows, according to the size of the plow and the desired distance between the rows. The field was thus left in ridges about four feet apart. After the ground had been pulverized by a small harrow, the ridges were split open with a small plow, and the seed was sown into this furrow at the rate of two or more bushels per acre. This was usually done by a negro woman, who carried the seed in her apron and strewed the seed several feet along the furrow at each cast of the hand. The furrow was closed by means of the harrow or a board which had a concave under surface to fit the crest of the ridge, and was screwed to a small shovel or "scooter" plow. When the cotton had attained a height of several inches, the laborious process of thinning began. This was done by means of a hoe, followed (sometimes preceded) by a plow to again round up the ridge, and to keep the space between the rows free from weeds. With the hoe the grass on the sides of the ridge was cleaned away, and the cotton blocked out in the rows, leaving two plants (eventually only one) in hills twelve or fourteen inches apart. The cotton continued to be cultivated in this way with the hoe and plow or with an implement called a "sweep," at intervals of about twenty days, until nearly picking time, the ground being thus gone over from three to five times. Planting began as early as the end of February in some of the eastern states, and was often not ended until the middle of May in the Southwest. The first blooms usually appeared in May and June, and picking began about the first of August in the East and continued until the middle of December in the West. This was a tedious but not laborious task, and in its accomplishment women and children as well as men were employed. In the early part of the century fifty pounds a day were accounted the average per hand, but by 1854 Wailes states that "the children double this; and two hundred pounds is not unfrequently the average of the whole gang of hands, to say nothing of those who pick their four or five hundred pounds of cotton."

There were few agricultural implements employed in the cultivation of cotton previous to the war, and such as were in use were of

a very simple order. Machinery was not used at all in the cultivation of Southern crops. The tools employed were usually the work of the neighborhood blacksmith, or were made on the plantation, "in a style which was the excess of bungling." Such were the "scooter" or "bull tongue," a strip of four-inch bar iron, pointed and bent, used for opening the furrow in which the seed was sown; the "sweep," an implement having two wide-cutting blades forming two sides of a triangle, and used for cleaning the grass or weeds from the rows; and the "scraper" already described, used for covering the furrow in which the seed had been sown. These tools, together with the clumsy all-iron breaking plows and turning plows, and the hoe, "the rudest, the least effective and the most exhaustive to strength and patience of any tool largely used," were about the only implements that were in use on the Southern plantations before the war. Even "cotton planters" were not widely used. Seabrook reports that as late as 1844 the plow was unknown to the growers of the long-staple cotton, except "in the breaking up of the soil, and as an assistant in forming the ridge." The slight expenditure for agricultural implements is illustrated by the statement of De Bow that on a South Carolina plantation of 4200 acres, 2700 of which were under cultivation, and where 254 slaves were employed, the capital invested in all plantation tools and implements, including wagons, was only equal to $1262, and on an Alabama plantation of 1100 acres, with 120 slaves, the implements were valued at $500.

Much was written by Southern agriculturists and editors previous to 1860 on the subject of fertilizers for cotton. Nevertheless, the use of this artificial means for restoring fertility to the soil was a very limited one. In 1808 Ramsay wrote of the South Carolina planters as follows: "The art of manuring land is little understood and less practiced. The bulk of the planters, relying on the fertility of the soil, seldom planting any but what is good, and changing land when it begins to fail for that which is fresh, seldom give themselves the trouble to keep their fields in heart." Although there were thousands of acres of pasture lands which could have been utilized for raising stock or for raising hay to feed the cattle in winter, although there were numerous beds of

compost and marl scattered throughout the Southern States, "ample for a perpetual supply for all possible drain upon the resources of the soil," and although the long coast line was able to furnish "abundant stores of fish and seaweed for manuring adjacent fields," very few of the planters knew of the value and use of these fertilizers, and of those who did know, but few applied them.

Cotton is said to be the least exhaustive to the soil of any of the great staple crops of America, and if the seed is returned to the soil there is comparatively little of the vitality of the land withdrawn by cultivation, but even this slight effort of fertilization was not resorted to by the majority of the cultivators. There were always, of course, a few planters who gave their attention to improved methods of cultivation and made a profitable use of fertilizers, and there were many more who scattered on their lands the cotton seed or the small supplies of stable manure which had collected over winter. So little attention was given to stock raising, however, and to the preservation of the stable manures, that these feeble efforts to delay exhaustion were of little avail. The planters in the rich bottom lands along the Mississippi hauled the cotton seed into the bayous to be eaten by the hogs or to be carried into the Gulf by the "Father of Waters."

During the later years of the slave régime cotton seed became a valuable article for the market, and the planters began hauling it to the cotton-seed mills. Had they stipulated for a return of the hulls after the oil had been extracted, and returned these to the soil, there would still have been but little loss to the soil and perhaps a gain, but few of them did this. Land was so little valued that the owners did not consider it profitable to attempt to maintain the fertility of old lands when new ones of greater fertility were to be had almost for the asking. It was considered more profitable to withdraw the entire wealth from the soil than to replace it, more profitable to "kill land" than to cultivate it.

As was naturally to be supposed, the first signs of exhaustion came from the Atlantic coast states, and some attention had been given in the Carolinas and Georgia during the 50's to restoring the fertility of the soil by means of manuring and crop rotation.

In the Southwest, however, no attention was given to this subject until some years after the war, and even in the Eastern states the proportion of fertilized land was insignificant.

The failure of the cotton planter to use fertilizers he did not atone for by adopting any other measures for the prevention of soil exhaustion. Rotation of crops was almost unknown at the South where the one-field system of cultivation had come down from colonial days. The one great object was to raise cotton, and the land was planted in this crop for a succession of years, until it refused longer to bring forth a remunerative yield and was then "turned out" to grow up in briars, sassafras and scrub pines. "A purchaser looking for land, if he found a field without a stump, considered that fact *prima facie* evidence that it was worn out."

The suitableness of cotton for slave labor and the high prices which this staple often brought on the market stimulated the planters to raise cotton almost exclusively, and to raise it on lands which were better suited to other crops. The high prices of provisions compelled many of the planters, especially in the Eastern states, to alternate corn with cotton, thus making a two-field system of cultivation. But such a change was of little value in preventing the wearing out of the lands, for it violated the first principles of rotation introduced into agricultural science by the old three-field system of cultivation, which prescribed that crops of the same nature should not be planted in succession, but that a winter crop should succeed a summer crop, with the land lying fallow the third year. Both Indian corn and cotton were summer crops, were cultivated in the same manner, and although their chemical analysis was imperfect, seemed to draw the same ingredients from the soil. Yet as late as 1860 this was the only regular rotation pursued on any large scale in the cotton belt.

Drainage and various systems of sub-soiling were measures often recommended for deferring, if not preventing, the exhaustion of the soil. The Tullian or Lois Weeden system, which combined fallowing with sub-soiling, was for some time a theme much discussed by "theoretical" agriculturists, but not many "practical" farmers had heard of it, much less made use of it. Deep

plowing was little followed. The ground was usually scratched to the depth of about two and a half inches by the old iron breaking plows universally in use on the plantations, and when this shallow cultivation had ceased to be profitable, the planter removed to new lands.

This system of agriculture which was so rapidly depleting the cotton lands of their fertility, was not characteristic of the South alone. It had been the method universally practiced in all the North American colonies, and it is still the only system known on the wheat lands of the Northwest. Intensive culture has never been resorted to by any people or in any region as long as the extensive system has proven the more profitable. Labor and capital are too scarce in a new country to admit of any other than an extensive system being pursued. "New settlers are not censurable for beginning this exhaustive culture."

But what was notable about Southern agriculture was that even the apparent injury done to the land by the "one-crop" system had little or no effect in bringing about a change in the methods of cultivation. "The system is such," wrote an editor of a Southern agricultural paper in 1860, "that the planter scarcely considers his land as a part of his permanent investment. It is rather a part of his current expenses. He buys a wagon and uses it until it is worn out, and then throws it away. He buys a plow, or hoe, and treats both in the same way. He buys land, uses it until it is exhausted and then sells it, as he sells scrap iron, for whatever it will bring. It is with him a perishable or movable property. It is something to be worn out, not improved. The period of its endurance is, therefore, estimated in its original purchase, and the price is regulated accordingly. If it be very rich, level land that will last a number of years, the purchaser will pay a fair price for it. But if it be rolling land, as is the greater bulk of the interior of the Southern States, he considers how much of the tract is washed or worn out, how long the fresh land will last, how much is too broken for cultivation, and in view of these points determines the value of the property."

As the land became exhausted in the old cotton states, such as South Carolina and Georgia, the planters abandoned their estates

and moved farther west to Alabama or Tennessee, there to begin over again the process of "land killing" and then, perhaps, once more desert their fields and settle on the virgin soils of Arkansas or Texas. Of those who did not leave the older states, many abandoned cotton culture. The cotton crop of 1860 showed an increase of more than 100 per cent over that of 1850. But the increase in the Atlantic coast states was only 44 per cent, while in the western cotton states, Tennessee, Alabama, Mississippi, Louisiana, Arkansas and Texas, the increase was over 153 per cent. The crop of 1850 was about an average one for the decade 1851–1860. If we could compare by states the average crops for the two decades, it is doubtful whether we would find much, if any, increase in the production of the Atlantic states.

While the value per acre of the occupied land in the older states of the North was several times greater than in the new states to the west of them, in the South directly the opposite of this was true. In 1850 the occupied land in the Atlantic coast states was valued at only $5.34 per acre, while that of the Southwestern states was worth $6.26 per acre. "What are we to do in South Carolina?" wrote ex-Governor Hammond of that state in 1858. "But a small proportion of the land we now cultivate will produce two thousand pounds of ginned cotton to the hand. It is thought that our average production cannot exceed twelve hundred pounds, and that a great many planters do not grow over one thousand pounds to the hand. . . . A great deal has been said upon the improvement of our agricultural system. Neither our agricultural societies nor our agricultural essays have effected anything worth speaking of. And it does seem that, while the fertile regions of the Southwest are open to the cotton planters, it is vain to expect them to embark to any extent in improvements which are expensive, difficult or hazardous. . . . Our cotton region is too broad and our Southern people too homogeneous for metes and bounds to enforce the necessity of improving any particular locality."

But the low prices and greater fertility of the western lands were not the only reasons why the exhaustive system of land cultivation continued at the South. The same opportunities for

western expansion existed at the North, and while the methods of cultivation there were far from perfect, it had been found more profitable in New England and the Middle States to manure the ground and to rotate the crops when the fields showed signs of exhaustion than to abandon them for western lands. Only the surplus population was sent to the new states.

The diversity of crops grown was much greater in the North than in the South, and this permitted the adoption of a more complex and beneficial system of tillage than the one- or two-field systems. In the South the greater crops of all the slave-holding states were hoed crops, cotton, corn, tobacco and sugar cane, and a rotation of these was of little value in preserving the fertility of the soil. To some extent the planters were excusable for not cultivating other crops. Wheat and other small grains were often unprofitable on account of the rust. For many other commodities there was no market. A diversified system of farming demands to a large extent a local market, for many kinds of produce raised under this system, such as vegetables and fruits, will, on account of their perishableness, difficulty of transportation, etc., meet with only a local demand. The small urban population of the South, itself largely a result of the difficulty of applying Southern labor power to urban pursuits, created very limited local markets. There were in the ten great cotton states in 1850 but seven cities having each 8000 or more inhabitants, and in 1860 there were but eleven such cities. With the exception of Indian corn, such crops as were raised were produced for the world market. Corn was raised only for domestic use. With bacon it constituted almost the only food used by the slaves and a considerable portion of the whites. As the corn fattened the hogs as well as the negroes, the subsistence of the laboring population was practically conditioned by the supply of this one commodity. This explains its extensive cultivation at the South. But corn was never intended to take the place of cotton as the principal crop. Cotton was given the best lands, and by many planters not enough corn was raised to supply the needs of the plantation.

Another important reason for the continuance of the "one-field" system of agriculture lay in the speculative character of cotton

raising. Taken year after year, the culture of cotton did not yield such large profits as would have resulted from a diversified system of farming, and it often proved the occasion of loss. Thousands of planters heavily in debt had their crops pledged to the cotton buyers long before they were harvested, possibly even before they were planted.

Notwithstanding these failures, the high prices which resulted when there was a failure of the crop elsewhere furnished the planter an incentive to continue the "one-crop" system, and to rely on his cotton crop to pay off the debts which its exclusive cultivation had brought upon him. "As I have no disposition to gamble, or invest in lotteries, I do not raise cotton," wrote one Arkansas planter who had become disgusted with the speculative character of cotton raising and had gone over to a diversified system of farming.

But it was the ease with which the planter could remove to other lands when the old plantation fields had become exhausted that furnished the principal reason for the failure to adopt an intensive system of agriculture at the South. The comparatively sparse population of this part of the country, due to the fact that the lack of respect for labor there discouraged immigration, limited the demand for new lands largely to those who were pursuing the system of cultivation by exhausting the old lands. The limited competition for land therefore kept the price down to where it was cheaper to take up these new tracts than to keep up the fertility of the old fields, and this fact permitted the extensive system of cultivation to continue longer without being felt than would have been the case had conditions been otherwise. No planter thought of holding only such land as he wished to cultivate at one time. In taking up a new tract of land, he did it with the intention of cultivating only a part of it and then "turning it out" and bringing into cultivation another portion of the plantation. Of the land in farms in the old cotton states, the Carolinas and Georgia, over 70 per cent was unimproved in the decade 1850–1860, while New England and the Middle States, with less fertile soils, showed approximately two-thirds of their farm lands to be under cultivation. The habit of considering

the negro slave rather than the land the investment made it easy and inexpensive for the planter to remove from one part of the country to the other. Capital and labor were united in the person of the negro slave, and the planter who had once decided to emigrate found it easy to take his property with him.

The part played by compulsory labor in the cultivation of the cotton plant previous to 1860 was so great as to almost completely identify in the mind of the observer the two institutions, the culture of cotton and negro slavery. Slave labor was not confined to the cultivation of cotton, it is true. In the rice swamps of Georgia and the Carolinas and on the sugar plantations of Louisiana, slaves did nearly all the work, and they also formed a large proportion of the labor force of the Kentucky, Maryland and Virginia tobacco plantations. But the number of acres devoted to the production of these crops was comparatively small, and the number of negro slaves employed in their cultivation in 1850 was scarcely more than equal to the total number of slaves in the United States in 1790, before the real movement in favor of cotton had begun. The increase in the slave population after 1790 was absorbed mainly by the cotton industry, and we have already noted the wonderful effect which the expansion of this industry had upon the price of slaves.

Although in the majority of cases the planter worked the plantation with his own negroes, the hiring of slaves from their master by the year was not unusual. The price paid varied, of course, not only with the age, sex and working ability of the slave, but also according to the section of the country. By an investigation made by the Bureau of Agriculture at Washington at the close of the war, it was ascertained that the average prices paid for agricultural labor in 1860 were about as shown in the table on the following page.

Numerous estimates have been made as to the cost of maintaining a slave throughout the year. Obviously there is a wide room for disagreement here, for many varying factors need to be considered. On large plantations the average cost was less than on the small ones. Some planters raised enough corn and made enough pork to feed the negroes throughout the year, while others

	Men	Women	Youth
Virginia	$105	$46	$39
North Carolina	110	49	50
South Carolina	103	55	43
Georgia	124	75	57
Florida	139	80	65
Alabama	138	89	66
Mississippi	166	100	71
Louisiana	171	120	72
Texas	166	109	80
Arkansas	170	108	80
Tennessee	121	63	60

purchased all or nearly all the food supplies. Some planters furnished twice as much clothing to their slaves as others did. Some planters furnished meat as a regular article of diet. Others furnished it only occasionally. The shelter and clothing required by slaves in the border states was, of course, in excess of that needed in the mild climate of the Gulf States. From observations made and statistics gathered by De Bow, Russell and others, it would seem that on the large plantations the average cost of maintaining a slave throughout the year, including expenditures for clothing, food, tobacco, etc., and the payment of taxes, was not far from $15, and that on the small plantations the expenditures for maintenance of the slaves often amounted to $30 or $40 per capita. Perhaps the average expense for maintenance of the slaves, young and old, throughout the cotton belt, would be not far from $20 per annum.

Merely from a business standpoint it was to the interest of the planter to furnish sufficient food and clothing to his slave to keep him in health and good working order; and suffering for want of food was no doubt a thing of seldom occurrence. This food, however, was of a coarse kind, and though healthful, lacked variety. Olmsted considered it inferior to that furnished prison convicts at the North. From four to six (sometimes as high as ten) quarts of corn meal and a quart of molasses were usually dealt out to the negroes each week. To this were sometimes added vegetables in their season and usually half a pound of bacon for every

able-bodied negro. Louisiana was the only state which required by law the furnishing of meat to slaves, and even there it does not seem always to have been observed, although it was generally practiced throughout the South. On most of the plantations the negroes were allowed to cultivate "truck patches," and to raise poultry and sometimes a pig. What produce thus raised they did not themselves consume, they sold, and invested the returns in tobacco, whiskey and Sunday finery.

On some plantations, however, the slaves were not allowed to cultivate these "patches," for it tempted them to reserve for cultivating their gardens in the evening the strength which should have been expended in the cotton field. The hours of work on the cotton plantations were from sunrise to sunset. During the picking season the negroes worked as long as they could see. South Carolina had a statute forbidding the working of slaves for more than fifteen hours a day. Noon "rests" of from one to two hours were not infrequent, though far from universal.

In eastern Georgia and South Carolina the work was performed by "tasks." Each laborer had assigned to him the amount of work which he was expected to do in a day, such as hoeing from one-half an acre to an acre of corn or cotton, or picking a certain amount of cotton. When he had finished his task, if there were time left, the slave was allowed to use it as he pleased. This method of "tasking" was greatly preferred by the slave to any other method of working. Many finished their "tasks" by the middle of the afternoon. The slaves were worked in "gangs," and were classed as "full hands," "three-quarter hands," "half hands," and "one-quarter hands," these terms referring to the portion of a "full hand's" work which was required of each slave. "Every negro knows his rate and lawful task so well that if he thinks himself imposed upon by the driver he appeals at once to the master."

The "tasks" were set by the drivers, whose business it was to see that they were performed. Drivers were usually selected from among the stronger and more intelligent slaves. White overseers were required by law on each plantation where the owner did not himself personally superintend the work. On the smaller plantations the overseers were also the drivers.

The overseers of the plantation were generally selected from the lower grades of whites and did not enter the best society of the South. They were often of a brutal character. Their wages varied from $200 to $600 a year, but sometimes $1000 or $1500 was paid when the planter did not reside on the plantation and the overseer had entire responsibility. The overseer was valued according to the crop which he was able to make, and therefore many of them worked the slaves with little regard to the health and endurance of the latter. Mr. W. W. Phillips of Jackson, Mississippi, one of the most intelligent planters of the South, wrote as follows to an agricultural paper, *The Southern Planter*: "Overseers are not interested in raising children, or meat, in improving land, or improving productive qualities of seed or animals. Many of them do not care whether property has depreciated or improved, so they have made a crop (of cotton) to boast of."

The custom of valuing the overseer according to the amount of work which he could get out of the negroes led to frequent changes in overseers, one being rarely employed more than two years. "Two years of service is sure to spoil them."

It is much easier now, after thirty years' experience of free labor in the cotton fields, to judge of the relative advantages of free and slave labor in the cultivation of this staple. The number of free laborers employed prior to 1860 was small, and the conditions of their employment were usually so different from those of slave labor that comparison between the two systems is necessarily imperfect. Yet the opportunities for such comparison were not wholly wanting, and the results warrant us in saying that it was a misfortune for Southern agriculture that slave labor was ever applied to the cultivation of the cotton plant. As has been pointed out in the preceding chapter, cotton culture offered many and great advantages over other crops for the use of slave labor; but slavery had few, if any, advantages over free labor for the cultivation of cotton. On the sugar and rice plantations on the low, marshy coast land, where the climate was unpropitious for whites, there was probably an economy in the use of slavery so long as the colonial system of agriculture was itself profitable, and perhaps the same was true of the Mississippi river bottoms. But

there were no climatic disadvantages for whites throughout the greater part of the cotton belt, where the use of slave labor was directly responsible for the perpetuation of the "one-field" system of agriculture long after that method of tillage had survived its period of usefulness and had succeeded in completely exhausting the fertility of the once productive soils.

Slave labor probably cost absolutely, though not relatively, less than free labor, and the owner had the advantage of absolute control over the laborer's services. But this was more than offset by the lack of interest which the slave took in his work. His low cost of maintenance did not make up for his waste of his master's property. The slave learned methods of agriculture slowly, and he therefore worked best when employed in cultivating only one crop. And as to allow him to remain idle was to lose for the time being the use of almost the entire capital of the planter, it became necessary to furnish employment which should last throughout the year. The cultivation of cotton spread over three-fourths of the year, and, together with the clearing of new lands, furnished continuous employment to slave labor, which the cultivation of the cereals, the raising of grasses, vegetables, fruits, etc., would not have done. The slave, therefore, stood in the way of the adoption of a rotative system of agriculture. While cotton raising by means of slave labor was an industry of increasing or even constant returns, the profits of the planter were invested in new lands and more slaves. When the industry reached that point in diminishing returns where the profits disappeared, the planter, instead of reducing his labor force and landed property for the purpose of adopting an intensive system of farming, found greater profit in breeding slaves for the planters on the still unexhausted western lands.

The one great advantage which Mr. Russell, who seems to have been favorably impressed with the slave system, found in the cultivation of cotton by means of slave labor, was the "organization and division of labor," of which their numbers permitted on the large plantations. This seems to have been a conclusion derived from *a priori* reasoning, rather than from observation, for there were no large plantations worked by free labor previous to the

Civil War. But, at most, this statement could have been true for large plantations only, and the general proposition that slave labor was more profitable than free labor would, therefore, rest on the hypothesis that the system of *grande culture* was more profitable for cotton than *petite culture*. Mr. Russell assumed that it was, and as he was logical enough also to hold that the system of growing corn and cotton continuously until the land was so exhausted that it had to be abandoned "to nature for a series of years" was the best system that could be pursued in cotton culture, his assumption based on this premise was doubtless a correct one. But the scientific agriculturists of the South did not agree with Mr. Russell as to the wisdom of the exhaustive system of agriculture, although there were apparently few of them who were willing to ascribe this system to the maintenance of slavery.

Of the free labor which was engaged in the cultivation of cotton, the greater part was of a class which was far from representative of the average intelligence and ability of American agricultural labor. Immigrants were repelled from the South by the stigma cast on labor in a slave region. The majority of the white laborers were of the class of "poor whites," many of them descendants of the "redemptioners," "servants sold for the custom," and "indentured servants" sent into the colonies by Great Britain from the London streets and the debtor prisons. Released from their period of bondage, and finding it impossible to enter the social ranks of the property-holding classes, and with their labor despised because of the association which it had with slavery, these people and their descendants had become the parasites of Southern society. Some of them were forced into the mountain region of eastern Tennessee and Kentucky and western North Carolina, and others were left on the abandoned cotton and tobacco lands of the sandhill region of South Carolina and Georgia. Even in the western states they were always found on the poorer lands. These people obtained a scanty subsistence by raising on their depleted soils small quantities of Indian corn, vegetables and cotton, or quite often by stealing from their wealthier neighbors on the large plantations. In addition to the cotton which they used in their homespun garments, these small farmers usually raised one or two

bales for market. Those among them who had any ambition to advance in the world purchased a slave as soon as they were able. With one slave secured, it was easy to purchase another on credit.

Yet even with this poor grade of white labor, a considerable quantity of cotton was produced for market, and something is to be said for it if it could afford to raise cotton on lands on which slave labor was not profitable. Even Mr. Russell recognized that slave labor was only suited to the rich lands, and that in the pine barrens, under the small farming system, free white labor had the advantage. For, in spite of the competition of the large planters, it was by the cultivation of cotton that these small farmers made their profits.

But the best example of the advantages of free labor in the cotton fields, the only example, in fact, which should be taken to fairly compare the two systems, was the cultivation of cotton by the German settlers around New Braunfels, on the plains of Texas. Mr. Russell failed to take account of this, probably because he did not believe that Texas was destined to become a great cotton-producing region. This comparison between free and slave labor is eminently fair to slavery, for the two systems here competed on virgin soil, on which slave labor was always employed with its maximum advantage. The small farms worked by the whites were under many disadvantages, due to larger proportional expenses for fencing, for farm implements and animals, and for ginning. The small farmer was also obliged to sell his cotton through middlemen, while the larger planter dealt directly with the exporter.

Notwithstanding these disadvantages the Germans prospered in the cultivation of cotton, and although they were only a mere handful in number, they were able to send ten thousand bales of cotton to market in a single year. Their fields were cleaner picked and the workers showed more skill and intelligence at their work than the slaves who had been reared in the cotton field. The cotton which they sent to market was also better cleaned and baled and was worth from one to two cents more per pound than the cotton cleaned by slave labor. Their methods of cultivation, their lands and farm improvements and their standard of living were far better than those of their wealthy slave-owning neighbors.

The reader will have already understood that the characteristic form of the cotton plantation was the large estate. Not all the large landed properties in the South, however, were confined to cotton culture. Many of the large plantations were already in existence when cotton culture was introduced. Their origin is to be traced partly to the social customs of the early settlers, many of whom were the sons of the English landed gentry; partly to the facilities of commerce offered by the wide and slowly moving rivers in the Southern colonies, along whose banks the large plantations were usually to be found; partly to the laws of inheritance existing in the Southern colonies; and partly to the nature of the commodities which were raised on these plantations — tobacco, indigo and rice — the cultivation of which required more capital than was possessed by the small farmer. The large plantation owed its existence, most of all, however, to the labor system which existed in the Southern colonies where either slave labor or compulsory white labor was the prevailing form. The organization and superintendence of enforced labor was more easy and more economical on the large plantation than on the small one.

In spite of the hopes and predictions of many Southern writers at the close of the eighteenth century, the introduction of cotton culture did not result in a change from the large plantation system of agriculture to that carried on on small holdings. The tendency did, indeed, at first seem to be in that direction. The more industrious of the poor whites who had lacked the capital for engaging in the cultivation of indigo or rice were often led to take up a small holding, and, with the aid of their families, to engage in the raising of cotton. The abolition of the law of primogeniture in South Carolina and elsewhere also contributed to the breaking up of the large plantations. Besides, in cultivating the sea-island cotton, it had been discovered that there were great profits in developing this grade of cotton to the highest degree possible, and this required intensive cultivation, such as could be carried on only on the small plantation. But notwithstanding these circumstances which seemed favorable to the development of the small estate, the great movement throughout the cotton belt was

in the other direction. Cotton culture on large plantations offered great advantages to the slave holder over that of other crops. Such free labor as was to be found in the South was not of a character to push cotton raising on small estates by scientific methods of agriculture. It was easy to continue the old methods. And a system of agriculture which had no regard for the soil found its greatest profit by working as large a body of laborers and cultivating as many acres as could be successfully superintended by one man. The aim was to keep cost of production to a minimum.

For a number of years, therefore, the general tendency was to increase the size of the plantations. "Farms have a tendency to decrease in size more rapidly where the land is poor than where it is rich." In the older states, along the Atlantic coast, as the soil became exhausted, the planters who did not abandon their estates in order to seek out Western lands were forced to reduce the size of their holdings and to begin an intensive system of cultivation. This stage had been reached in the older states a decade before the emancipation of the slaves, and this is evidenced not only by the increased use of fertilizers and the adoption of a better system of agriculture, but likewise by the diminution in the size of farms. In the new states, however, the tendency towards smaller farms was not revealed previous to the Civil War. Not only do we find a failure to adopt improvements in agriculture, but with the exception of the first few years following the settlement of a state, when land speculators were selling out to new arrivals the lands which they had secured, we find the size of farms steadily increasing.

"Our wealthy planters," said Mr. G. C. Clay, a member of Congress from Alabama, in 1853, "with greater means and no more skill, are buying out their poorer neighbors, extending their plantations, and adding to their slave force. The wealthy few, who are able to live on smaller profits and to give their blasted fields some rest, are thus pushing off the many who are merely independent." Not until 1850 do we have statistical information as to the size of farms in the cotton-growing states. But a comparison of the figures furnished by the reports of this and the following census shows the truthfulness of the above assertions.

	Year Admitted to Union	Number of Farms		Average Size (Acres)	
		1850	1860	1850	1860
North Carolina	Original member	56,963	75,203	369	316
South Carolina	Original member	29,967	33,171	541	488
Georgia	Original member	51,759	62,003	441	430
Florida	1845	4,304	6,568	371	444
Alabama	1819	41,964	55,128	289	346
Mississippi	1817	33,960	42,840	309	370
Louisiana	1810	13,422	17,328	372	536
Tennessee	1796	72,735	82,368	261	251
Arkansas	1836	17,758	39,004	146	245
Texas	1845	12,198	42,891	942	591

The average size of farms in the ten cotton states in 1850 was 273 acres. The size of cotton plantations, however, is said to have seldom been less than 400 acres. Some of the plantations contained over 10,000 acres. There were in these same states in 1860, 3634 farms of more than 1000 acres each; 12,187 of more than 500 and less than 1000 acres, and 113,625 containing from 100 to 500 acres each.

In 1850 there were but 74,031 cotton plantations in the United States which produced more than 5 bales each. This divided into the estimated acreage of that year would give us approximately 675 acres as the average amount of arable land devoted to cotton production on each plantation within the 10 cotton states.

With the large plantations there naturally went large gangs of slaves. There were 347,525 families reported as holding slaves in 1850, but this number was too large, for, as Helper has pointed out, it included slave hirers. There were 2 persons reported by this census as holding each more than 1000 slaves; 9 who held more than 500 and less than a thousand; 56 holding from 300 to 500; 187 from 200 to 300; and 1479 from 100 to 200. Whether or not these large slave properties were held by the holders of the large landed properties cannot be stated definitely. There is little doubt but that this was the case however, for with few exceptions the slaves were employed almost exclusively in agriculture.

Although there were many large estates in the slave-breeding states and in the old cotton states South Carolina and Georgia, the large cotton plantation was seen to its best advantage in the alluvial lands of Mississippi and Louisiana. Here was the cotton garden of the world, settled under the patronage of the state banks in the '30's, and containing perhaps the richest soil in the United States. The land was all taken up in large holdings and worked by slaves. The owner seldom lived on the plantation. Absenteeism was in fact one of the great evils of *grande culture* in the South. "It may be computed from the census of 1850 that about one-half of the slaves of Louisiana and one-third those of Mississippi belong to estates of not less than fifty slaves each; and of these, I believe nine-tenths live on plantations which their owners reside upon, if at all, but transiently." The management of the estates was confided to overseers. These, as we have seen, found their value rated according to the crop which they made, and the plantation, the slaves and other property suffered under their management of it. "Having once had the sole management of a plantation and imbibed the idea that the only test of good planting is to make a large crop of cotton, an overseer becomes worthless. He will no longer obey orders; he will not stoop to details; he scorns all improvements, and will not adopt any other plan of planting than simply to work lands, negroes and mules to the top of their bent, which necessarily proves fatal to every employer who will allow it."

As the planters spent so little time upon their estates, they concerned themselves little with the farm improvements, such as buildings and fences. These were much inferior, not only to those on corresponding estates at the North, but also to those on the farms of Northern farmers of only moderate means. The overseers were usually housed in frame houses of an inferior sort; large sheds sufficed for the storing of cotton until it was hauled to market; there was seldom much farm stock, and such as was to be found, including work horses and mules, was poorly housed and sometimes only half fed. The negroes lived in small log houses about twenty feet square and containing usually only

the one room. The big western plantations seldom raised sufficient provisions for their own laborers or the feed for the horses and mules, but were almost entirely devoted to cotton. "Large plantations," said Mr. Russell, "are not suited to the raising of hogs, for it is found to be almost impossible to prevent the negroes stealing and roasting the young pigs. This is one of the disadvantages in raising certain kinds of produce incidental to a system of slavery. The number of cattle which can be raised on the large cotton plantations, do little more than replace the draught oxen that are required. The sheep only supply the wool needed for clothing; and the mules used for plowing are bred in the Northern states."

The maximum efficiency of slave labor was said to be secured when not more than fifty negroes were placed under the management of a single overseer. The difficulty of securing good overseers and the high salaries which were often paid them, however, frequently led to the placing of more than one hundred slaves under the supervision of one man. Each overseer regulated the hours for work on his own plantation. What these hours were we have already stated.

The small plantations were for the most part in the old cotton states the Carolinas, Georgia and Tennessee. Their owners, usually of the poor-white class, were either non-slave-holders or owned only a few negroes. The most of the land where the small plantations flourished consisted of pine barrens. The owner was usually his own overseer and sometimes his own slave driver, although those who had any social pride would not do this degrading work. There was a greater diversity in the crops grown on these small farms in the hill country than on the large plantations, due partly to the fact that the land had been exhausted for cotton, and partly because the planter could not afford to buy his corn and bacon, as did his richer neighbors. More stock was also raised, although it was usually of an inferior breed and was ill kept. As stock was allowed to run at large, some of the states compelled the planters to keep up fences. This was a serious burden to the small farmer, for, owing to his small enclosures, the proportion of land given up to fences was a large one and the

cost of construction and maintenance of these fences was considerable. In South Carolina, the state geologist estimated in 1858 that the cost of fences every ten years equalled the annual value of all the stock (cattle, sheep and hogs) which these fences were intended to prevent from becoming injurious to other property.

Methods of cultivation on these small plantations were, owing to the ignorance of the people, but little better than those on the large plantations. In some portions of the South, however, where the people were of a more intelligent character, the houses and farm improvements were good, and the people lived in more comfort than even those living on the large plantations. Domestic manufactures flourished in these neighborhoods. Each family spun and wove from wool or cotton the garments required for the use of its own members, while the neighborhood shoemaker and blacksmith supplied the shoes and farming implements required by the community.

The almost universal form of land tenure throughout the cotton belt was individual ownership, whether of large or small tracts of land. In the hill country, as we have already observed, the small farms predominated; elsewhere latifundia were the rule. The renting of land for agricultural purposes must have been extremely rare, for census and agricultural reports and travellers' accounts are alike silent in regard thereto. Where the average price of occupied land was only $5 or $6 per acre and new lands could be secured for from 50 cents to $3 per acre, there would be small reason for any one renting land. It was not until the break-up of the agricultural system of the South by the Civil War that land in the planting states came to have a rental value.

Although nearly every writer who has attempted to describe Southern agricultural conditions has had something to say about the credit system with which Southern agriculture was involved, definite information concerning this interesting phase of rural economy previous to the war is difficult to obtain. Pre-bellum writers have usually contented themselves with deprecating the practice of the Southern farmer by which he rendered himself dependent upon factors or merchants by pledging his crops

months ahead of harvest in return for advances made by these factors, but they have told us little concerning the terms of the contracts or the extent of the practice. Later writers who have described the credit system have often overlooked the fact that this system existed previous to the war, and have seemed to indicate that liens on crops are a phenomenon which has been produced by the changes wrought in Southern agriculture since 1865.

Yet agricultural credit is no new phenomenon in the South. The custom of "anticipating crops by engagements founded upon them" existed in South Carolina, according to Ramsay, even before the Revolution, when advances seem to have been made by the English merchants. The desolation in the South caused by the war for independence increased the planter's need of obtaining credit, although the securing of this credit was rendered more difficult, "for the indulgence formerly granted to subjects in Carolina has seldom been extended to citizen planters." "The merchants, knowing the value of the staple commodities of Carolina, were very liberal of credit to the planters; but on terms of enhanced price, as a security against loss and protracted payments." And thus the obtaining of credit, which at first was a result of the necessity of beginning agriculture at all, continued either because of the lack of economy on the part of the planter, or because the dependence upon one crop, which often failed, compelled the cotton growers to pledge future crops in order to continue planting. "A few of the most shrewd and laborious (planters)," wrote Mr. James H. Lanman in 1841, "manage to accumulate large fortunes; yet the liberal and free indulgence of much the greater part scarcely enable them to pay their expenses from year to year, and often, as is well known, the harvest of one year is, as it were, mortgaged for the expenses of the next, and those means which in the hands of some would be a source of vast profit, become in their hands a cause of mere competence."

The chief borrowers in the cotton belt were the large planters. The small farmers in the hill country who raised their own provisions, and who bought little and sold little, had small use for the mechanism of credit, even if they had been considered desirable debtors. Negroes were usually sold on credit, even to the small

farmer, however, provided he had already secured means to purchase one slave for cash. The possession of one slave seemed to be a guarantee that the owner would be able to pay for a second one. The desire to increase slave property was a frequent cause of the planter running in debt. "The majority of planters would always run in debt to the extent of their credit for negroes, whatever was asked for them, without making any calculation of the reasonable prospect of their being able to pay their debts. When any one made a good crop, he would always expect that his next one would be better, and make purchases in advance upon such expectation. When they were dunned, they would attribute their inability to pay to accidental short crops, and always were going ahead risking everything in confidence that another year of luck would favor them and a big crop make all right." In addition to their slaves, it was customary for a large part of the planters to buy on credit the provisions and clothing for the negroes and the tools and stock needed on the plantation. The factors at the port towns where the cotton was sold were usually the money lenders, although sometimes the merchants of New York made advances on the growing crops. The merchants in the Southern cities sold their goods on credit, charging necessarily much higher prices than when they sold for cash. Even then the risks were so great that in 1855 the Southern Commercial Convention recommended the chambers of commerce and commission merchants of the Southern and Southwestern cities, "to adopt such a system of laws and regulations as will put a stop to the dangerous practice heretofore existing of making advances to planters in anticipation of their crops—a practice entirely at variance with everything like safety in business transactions and tending directly to establish the relations of master and slave between the merchant and planter by bringing the latter into the most abject and servile bondage"; and they also recommended "the legislatures of the Southern and Southwestern states to pass laws making it a penitentiary offense for the planters to ask of the merchants to make such pecuniary advances." Very little seems to be known concerning the rates of interest or discount on loans made to the cotton planters previous to the war. Olmsted was told that farming land in the

Mississippi Valley was usually sold on the installment plan, the purchaser paying down what he was able to pay and giving security for the remainder. The rate of interest in such cases was 10 per cent. If the planter was unable to pay when the notes became due, he was obliged to borrow money from the Jewish money lenders at New Orleans, paying often as much as 25 per cent per annum for the loan, and pawning his furniture, jewels, carpets, etc., as security. Mortgages on farming land were almost unknown at the South, the low value of land and the exhaustive system of culture making this form of security undesirable. A planter's wealth was gauged by the number of negroes he held, and not by the number of acres he owned.

The crops then growing or yet to be planted became, therefore, almost the only security which could be furnished by the planter desiring to borrow money or purchase supplies. When a planter had prepared his ground for cotton, he would go to the factor at the nearest market, describe his land, and the number of acres he expected to plant. The factor, having satisfied himself of the truthfulness of the statement, would make the desired loan, taking a lien on the crop as security. The rates of interest on these loans varied considerably, according to the commercial integrity of the borrower, the fertility of the land, etc., but the rates were always high as compared with interest rates at the North. "Every person familiar with the condition of trade in the Southwest," wrote a Southerner, "knows what an enormous tax is levied by factors on planters for the advances made the latter. Ten, twelve, fifteen or more per cent are the common rates of interest charged for these loans. Besides, the planter is placed completely in the power of the factor. The crop is often sold to satisfy the exigencies of the latter's situation. This custom is likewise most oppressive to the factor. It obliges him to keep up a large amount of capital, and exposes him to a variety of hazardous risks." Many of the factors who had outstanding accounts with the planters at the outbreak of the war were completely bankrupted, owing to the inability of the latter to make good their promises of repayment.

"In the preparation of cotton for the market great advances had been made previous to 1860. The original methods of ginning and packing were even more slovenly than the methods of tillage. The invention of the saw-gin and of the M'Carthy roller gin revolutionized the methods of cleaning both the short- and long-staple cottons, but the methods of packing and shipping for many years lagged behind. During the operation of ginning no bags or boxes received the cotton, and oftentimes large quantities were thrown together until the inspectors were prepared to examine them. . . . There were no reinspectors of the cotton before it was deposited in the bag, in which the spinner would frequently find, in addition to a large supply of leaves and crushed seeds, potato skins, parts of old garments, and occasionally a jackknife."

During the later years of cotton culture under slavery the short-staple cotton was put up in square bales and covered with jute or hemp bagging. Nearly all of the large planters had their own gin houses and presses, and the preparation of the cotton for market thus being carried on directly under the supervision of the planter or his manager was probably more carefully attended to than it has been in later years when the competition of ginning establishments has resulted in a cheapening of the cost of ginning at the expense of the quality of the work done. But the plantation presses did not sufficiently compress the bales for purposes of export, and on the cotton arriving at the port cities, the bales were still further compressed by steam compresses to about one-half their former size. "There is no sufficient reason," wrote Mr. Lyman, "why this neat and solid packing should not be done at the plantations, thus saving the planter an expense of from one to two dollars a bale now incurred at the shipping ports." Even after this second compression, the American bales were sent to Liverpool in a less neat and solid package than those from the East Indies.

The changes wrought in the political, economic and social conditions of the South by the development of means of transportation are even yet imperfectly understood, and consequently not fully appreciated even by historians. Many of these changes in

methods of transportation are partly the cause and partly the effect of the spread of cotton culture. The early settlers in the back part of the Carolinas and Georgia were for the most part of Pennsylvania and Virginia stock. Between these people and the colonists of the low country "there were no ties of consanguinity, no identity of history, traditions or experience, no religious affinities, no personal acquaintance, no commercial relations." Between the two sections there was very little intercourse previous to the Revolution. The middle region lay between them, a wilderness through which there were no roads practicable for wagons. The trade of the colonists in the back country was, therefore, carried on almost entirely with Northern cities, Philadelphia, Baltimore and Richmond. It is not improbable that the importance of Philadelphia as a cotton market previous to 1790, as is evidenced by the establishment of roller gins there, even before the Revolution, is due to the carriage thither of small quantities of cotton produced by these early settlers in the back portions of the Carolinas. But the spread of cotton culture after 1793 made these old routes of trade impracticable and rendered necessary the establishment of means of communication and transportation between the back country and the coast region. Facilities for water transportation were first developed, and this was the usual method of sending cotton to market during the first half of the present century. River towns, such as Columbia, Cheraw, Camden, Hamburg, Augusta, Montgomery, Vicksburg, Natchez and Shreveport, were the chief markets for the inland cotton trade and the centers from which cotton was transported to the coast cities Charleston, Savannah, Mobile and New Orleans. Even the sending of cotton direct from the plantations to market was often by boat. Many of the large plantations were along the rivers, thus affording them an easy access to market. "Besides these ordinary conveyances, several novel methods were employed of moving produce to market. It is said that cotton was sent to Hamburg from the country near the upper Savannah by throwing the bales into the stream and letting them float with the current."

In 1826 there were ten steamboats engaged in the cotton trade between Charleston and the towns of Savannah, Augusta,

Hamburg, Georgetown, Cheraw and Columbia. These boats had an average capacity of 600 bales of 320 pounds each. The usual method, however, of transporting cotton on the rivers was by means of flatboats. These boats were managed by a "patroon" and five hands. They carried usually about 110 bales of cotton. The freights, including insurance, amounted to $1 per bale from Columbia or Camden to Charleston, and $1.75 from Augusta or Hamburg to Charleston. Transportation in this way was necessarily slow and expensive. A writer in 1831 says:

> The rich inhabitants of the back country of South Carolina and of those parts of North Carolina and Georgia which trade with Charleston are obliged at great expense to transport their produce and receive in return their supplies; weeks and not infrequently months have elapsed before places, not more distant in a direct line than one hundred and twenty miles, could effect their communication, and then and at all times with great expense and at no time without great risk of loss and great delay.
>
> The profits of the planter, or what ought to be his profits, are but too often consumed in the expense of transportation, and the merchant finds it impossible to calculate with that certainty which his operations require, the time he may expect arrivals or hear of his shipments having reached their points of destination.

Those planters who did not live along a navigable stream were usually compelled to haul their cotton overland by wagon to market. Even those who had the opportunity to make use of the rivers as highways of commerce often preferred to send their cotton overland. Thus Mills tell us that, although the freight from Columbia to Charleston by way of the Congaree and Santee rivers was in 1821 only $1.50 per bale, "this route was so long and hazardous that shippers preferred to send their cotton by wagons at a cost of $3 per bale."

The small planters often sold to dealers in the small towns who undertook to haul the cotton over the poor roads, sometimes one hundred and fifty miles, to where it could be sent by flatboats to cities on the coast.

The era of railroad building began in the South with the construction of the Charleston and Hamburg railroad, which was begun in 1830 and completed in 1833. But although there was a gradual development of railroad building in the South between

1834 and 1860, progress in this direction was less rapid than in the North. In 1850 the Southern States, including Virginia and Kentucky, had less miles of railway than were possessed by the New England States, and in 1860, there were but 9517 miles of railway in the Southern States, as compared with 11,114 miles in the North Central States.

The railroads exercised an important influence on cotton growing, not only in the fact that they furnished cheaper and more rapid transportation for cotton, but that they created local markets, stimulated interior buying and facilitated the deportation of negroes from the coast to the interior. "The railroads stimulated the extension of cotton culture and made Western provisions so cheap that the farmers neglected the production of food at home. By cheapening the transportation of corn and bacon to the cotton lands, and cheapening the carriage of cotton to the seaboard, an unaccustomed adjustment of prices came about, which led the farmers into that vicious semblance of economy of which the evil effects are still seen and felt throughout the states, whereby the independence and the substantial comforts of farm life are sacrificed to the pursuit of money returns from a large cotton crop.

Although there were many attempts made by Southern agriculturists and statisticians to determine what were the costs and profits of cotton raising, the results secured are not very satisfactory from a statistical point of view. Conditions of production varied not only according to the difference in locality, but within a single community they varied according to the size and management of the plantation. The large plantation with a superior organization of slave labor, produced at a less expense than did the small plantation adjoining. Difference in the fertility of the soil, in character of the seasons, in facilities for marketing will occur to any one at first thought. Even on a single plantation it was difficult to estimate the average cost of raising cotton, if any other crops were cultivated, or to say what proportion of the expense was to be legitimately reckoned as costs of cotton raising. About 1840, when planters were becoming alarmed lest India should become a successful rival of the Southern States as a cotton-producing country, there was a meeting of the "most distinguished

and intelligent planters" to take measures for counteracting these efforts which were being made by the East India Company. "It was then decided that so long as the American planters could get 8 cents (4d.) per pound for their cotton, delivered at the nearest market, they could afford to produce it, but that if a supply from any other quarter could be obtained for less than that sum, they must then turn their attention to the cultivation of other commodities."

In 1849 several of the large planters on the Mississippi bottoms estimated that they could grow cotton for 6 cents a pound, and planters writing for *De Bow's Review* declared that when they were obliged to raise cotton for 5 cents, the business was ruinous. The smaller planters must have had still higher prices if they found production profitable. Except during the decade between 1840 and 1850, cotton rarely sank below 10 cents a pound on the New York and Liverpool markets, and this was deemed sufficient, after deducting commissions and other marketing expenses, to enable the planter to make a profit. Ten cents seems, indeed, to have been considered the golden mean of cotton prices. If cotton sank below this figure its production became unprofitable; if it rose above 10 cents, labor became "too dear to increase production rapidly."

THE AGRICULTURAL DEVELOPMENT OF THE WEST DURING THE CIVIL WAR

By Emerson D. Fite

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ONE of the most remarkable features of the industrial and commercial conditions in the North during the Civil War was the steady growth of the agricultural states of the West. The passionate excitement of war and the deep interest in politics, which the present generation is wont to consider the only prominent characteristics of the time, after all absorbed but a part of the country's attention. There was a peaceful expansion westward, an agricultural development in those states comparable to that of the previous decade, which added enormously to the nation's resources and contributed largely to the final success of the North. Without the war this development might, indeed, have been greater; but its extent, in spite of the war, was marvellous.

The leading agricultural states — Indiana, Illinois, Wisconsin, and Iowa — were in the midst of great development when the year 1861 opened. Notwithstanding the check caused by the panic of 1857, the advance of their farming interests in the previous decade had been conspicuous, their agricultural area having increased 80 per cent and the value of their farms 270 per cent (from $277,000,000 to $1,027,000,000). Their combined wheat crop rose from 21,000,000 bushels in 1849 to 63,000,000 bushels in 1859, that of corn from 120,000,000 bushels to 230,000,000 bushels, and that of oats from 20,000,000 to 38,000,000 bushels. This growth, more rapid than agricultural growth had ever been in any other section of the North, was in strong contrast to the gradually decreasing crops of the East.

During the years of fighting there was continued advance. Large crops in 1860 and 1861 were succeeded in 1862 by

the largest crops in the history of the country up to that time, when in the four states under consideration the wheat crop of 83,000,000 bushels was $33\frac{1}{3}$ per cent more than in 1859, that of oats 43,000,000 bushels, an advance of 15 per cent. With the exception of the corn crop of 1863, which was damaged by frosts, and the wheat crop of 1864, these figures were maintained, and in some respects surpassed, in 1863, 1864, and 1865. The same is true also for the North as a whole, according to the estimates of the Department of Agriculture.

In no way, perhaps, is the steady progress better illustrated than by the grain shipments from the city of Chicago. The record of this city is marvellous. Starting in 1838 with a shipment of 78 bushels of wheat, and each year thereafter increasing her shipments, but never before 1860 sending out over 10,000,000 bushels of wheat and wheat flour, this new city for each year of the war shipped, on the average, 20,000,000 bushels of wheat and wheat flour. Her yearly corn exports, before 1860 never above 11,000,000 bushels, averaged during the war 25,000,000 bushels. Of all kinds of grain her shipments in 1860 were the largest to that date,— 31,000,000 bushels. But in 1861 these mounted up to 50,000,000 bushels, to 56,000,000 bushels in 1862, 54,000,000 bushels in 1863, 46,000,000 bushels in 1864, and 52,000,000 bushels in 1865. So it was also for Milwaukee, Detroit, Toledo, and other lake ports, and for Cincinnati, though with no such phenomenal advances. The commerce of the Great Lakes, by which route over 90 per cent of this grain was transported to Buffalo and other Eastern lake ports, was also very large, nearly twice as large as before 1861, while the grain receipts of Buffalo and New York and the business of the New York railroads and canals showed equal progress.

The lake ports, especially Chicago, were undoubtedly profiting by the closing of the Mississippi River to New Orleans, for they gained most of the shipments from the interior which usually went to the Southern port, so that the increased shipments of Northern cities and the increased traffic of the Northern transportation routes do not exactly measure the growth of the crops.

From 1850 to 1860 New Orleans received on the average approximately 10,000,000 bushels of grain each year. If we say that all of this trade was diverted to the one city of Chicago, — an unreasonable assumption, — we see that it constituted only from one-third to one-half of the increase of Chicago's trade. The opening of the river in 1863 had no appreciable effect in starting traffic again southward, because marauders on both banks continued to make the route unsafe, and because the Westerners had come to appreciate the speed and directness of the Northern routes.

It was a striking coincidence that the greater harvests and the loss of the river route southward were so fully anticipated by the railroad construction of the previous decade. In 1850 Indiana had 225 miles of railroads, Illinois 110 miles, Wisconsin 20 miles, and Iowa none. In 1860 the four states together had over 6990 miles of road ready to accomplish the heavy tasks to be imposed upon them. Whatever might be the increase of the crops, although the river was closed, there were ample facilities to take them to market. Seven new trunk lines from the South, West, and North centred in Chicago, whence three other trunk lines and the Lakes led eastward. This city, which in 1850 celebrated the arrival of its first train, was entered during the last part of the war by ninety trains daily. Better preparation in these sections for the strain of war could hardly have been devised.

At the beginning of the war many feared molestation of the crops; but when with each succeeding year plenty filled the land, boastings and congratulations were universal. That we were a great agricultural nation in a time of war few public teachers, speakers, or newspapers allowed the people to forget. It was fortunate that the source of our food supply was within our own borders and not in the Confederacy, and that it was never included within the theatre of war. With food plenty, the doubts and fears that so easily lend themselves to discontent in a time of public crisis had little place.

Another effect of the abundant food supply, which has never yet been adequately set forth but which, nevertheless, was very important, was its influence on foreign countries. We were a

granary for Great Britain and to a small extent for the Continent, from which countries the Confederate States were endeavoring to win recognition by pointing with pride to the fact that they were the largest source of the world's cotton supply. From 1850 to 1860 the production of American cotton had increased 120 per cent,— from 2,450,000 bales to not quite 5,400,000 bales, — that of wheat by less than 75 per cent,— i.e., from 100,000,000 bushels to 170,000,000 bushels. Furthermore, while the export of wheat was practically stationary in the period, that of cotton rapidly increased. (In 1850 we exported 635,381,604 pounds of cotton; in 1860, 1,767,686,338 pounds, the increase being gradual. The largest exportation of wheat and wheat flour, 1850–1860, was (in 1857) 31,000,000 bushels. The average for the decade was about 20,000,000 bushels a year. In 1860 it was 16,000,000 bushels.)

The cotton-consuming countries of the world were so far dependent on the Southern staple that over 80 per cent of the cotton consumed in Great Britain from 1851 to 1860 came from the United States; in 1860, 75 per cent of that consumed on the Continent also came from America. But in the same period the dependence on American grain was very much less, since we shipped almost none at all to the Continent, and in almost every year were outstripped by Russia in shipments to Great Britain.

What would be the effects of the war on these relations at once became a leading question in Europe, and it was generally assumed that there would be a great decrease in the receipts of both American staples, of grain as well as of cotton.

With the declaration of the blockade of the Southern ports by the United States one part of the expectation was fulfilled. The foreign factories could get little or no American cotton, and began to shut down or run but part time. The 2,580,700 bales received in Great Britain from America in 1860 fell to 1,841,600 bales in 1861, 72,000 bales in 1862, 132,000 bales in 1863, 198,000 bales in 1864, and 462,000 bales in 1865; but, on account of the enlarged importations from other fields, — Brazil, Egypt, West India, East India, China, Japan, Turkey, and Asia Minor, — the yearly consumption did not fall off as much as did the American

imports. The familiar story of the distress among the unemployed British operatives need not here be retold. In the consumption of cotton on the Continent, France took the lead, consuming about one-quarter as much as Great Britain. Germany was second, with Russia, Holland, Spain, and the other minor countries and ports following. In 1860, as has just been stated, three-fourths of this cotton came from America, to disappear practically with the opening of the war; but here again, as in the case of Great Britain, on account of increased importations from other countries, the yearly consumption did not fall off equally with American importations. Roughly speaking, the different Continental countries succeeded throughout the war in getting for use 50 per cent of the usual amount. There was distress among the French operatives, as in England, but not to so great an extent.

Great Britain's wheat crop (exclusive of the crop of the islands of the British seas), which in 1858 and 1859 averaged 16,000,000 quarters annually, in 1860 fell to 13,135,124 quarters, in 1861 to 11,078,948 quarters, in 1862 to 12,271,546 quarters, in 1863 to 13,957,554 quarters. In 1864 it rose to 17,922,048 quarters. The average yearly price per quarter in 1860, 1861, and 1862 rose to 53s. 3d., 55s. 4d., and 55s. 5d. For three successive years the country's grain crops were failures, and she was forced to import twice as much grain as usual. In the emergency it was the United States, at war, that supplied the new demand, — the same United States that had cut off the cotton. Great Britain was astonished. In 1861, the year when American cotton ceased to arrive in Great Britain, the British imports of American wheat and wheat flour were 36,000,000 bushels, three times more than ever before; in 1862, 37,000,000 bushels. The lowest point during the war was in 1864, — 20,000,000 bushels. Russia and Germany were the other great granaries of Great Britain, but the shipments of wheat and wheat flour from the one country to Great Britain actually fell off in 1861, 1862, and 1863; while those of the other increased, and that but slightly, only in one year, — 1862.

French importations to Great Britain in wheat and wheat flour, usually ranking next after those from Germany and Russia, in the first three years of the war fell off enormously, being only 25

per cent of what they were in 1860, for the sufficient reason that France also, along with Great Britain and all of southern Europe, suffered crop reverses in 1861. The French crop in this year was 25,765,000 quarters, as compared with an average yearly crop of 32,000,000 quarters in 1858, 1859, and 1860. Importations, which in 1858, 1859, and 1860 had averaged about 400,000 quarters, suddenly rose to almost 5,400,000 quarters in 1861. Of these increased importations from one-third to one-half came from the United States. The American shipments to France before 1861 were practically nothing; but in the year following the poor harvests they were 10,000,000 bushels of wheat and wheat flour, 5,000,000 bushels the next year.

Our Northern press and the public watched with keen interest these foreign shipments of grain. They noted that, when the British and Continental crops were poor, our own chanced to be unprecedentedly abundant; and they universally believed that these shipments played a large part in preventing foreign recognition of the Confederacy. The reasoning was most frequently applied to Great Britain, inasmuch as Americans in general were well acquainted with the situation there. American grain was more important to the British than American cotton, reasoned the Northerners. If Great Britain attempted to secure more of the latter by breaking the blockade, her receipts of the former would be materially lessened by the resulting war with the United States. This deficiency other nations were not in a position to make up any more quickly than that in cotton; and the resulting very high prices of food, going far beyond the prevailing high prices of 1862, and involving the whole kingdom, would be far more serious than a partial loss of work in a single district. Our large American harvests, therefore, were peculiarly fortunate, for, in addition to supplying our wants at home, they affected powerfully our international relations.

The same considerations apply to our relations with France, though not so forcibly. The French crops, in the first place, were poor but in a single year, not, as in Great Britain, for three years. The French importations were not nearly so large as the British, and prices in France did not go so high. Moreover, the cotton

industry in France, one-quarter as large as in Great Britain, occupied a comparatively small position in the nation. But, in this connection, we must not consider France by herself: she was a member of a combination, more or less strong, desirous of recognizing the Confederacy; and this combination, as a whole, could not dispense with American grain.

The shipments abroad had a pronounced reaction, also, on this country; for in the early part of the war, when we were producing more than was necessary for our own wants, and when, therefore, our home markets would naturally have been overstocked and prices for the farmers very low, the strong foreign demand tended to remove the surplus and prevent that disappointing result.

The other leading activities of the Western farmers, — hog, cattle, and sheep raising, — were also flourishing. According to the *Cincinnati Price Current*, the number of hogs packed in all the West, which never before the war had been above 2,500,000, in 1862–1863 rose to 4,000,000, and in 1863–1864 was 3,000,000. This increase was represented most graphically by the record of Chicago, where the number jumped from 151,339 in 1859–1860 to 970,264 in 1863–1864, and to a less degree by that of Cincinnati, St. Louis, and other cities. In 1862 Chicago outstripped Cincinnati, and wrested from her the title "porkopolis of the West." Most of the packing was done in the cities, where the industry was fast becoming centralized, but a part of it was still done in the small towns and in the country. Despite the progress of packing, however, we are informed by the statisticians of the time that the number of hogs raised each year was no greater than in 1860. The change is to be explained rather by the fact that the farmers sent to the market more of their stock than usual. Cattle raising was normal, and cattle packing was in its infancy.

In the nation at large the progress of sheep raising was most remarkable, inasmuch as wool was the most important substitute for cotton. The production of wool increased gradually from 1860, when it amounted to 60,000,000 pounds, to 1865, when the total production was 140,000,000 pounds; while in the latter year there were 32,000,000 sheep in the North, — double the number of 1860. The Western states shared the progress along with all the

North. Illinois, the leading agricultural state, in four years more than trebled her number of sheep. Ohio, the leading wool state, doubled hers. "No branch of business increased more rapidly than the domestic wool trade"; it grew with "gigantic strides." Everywhere the wool-growers were very energetic. Their conventions, new associations, and jealous rivalry with the wool manufacturers over the tariff are characteristic features of the times. In 1865 the National Wool-growers' Association was formed.

So far as crops and herds and flocks are concerned, the evidences of great material prosperity in the West are unmistakable. There was unusual activity in all branches of agriculture, and, on the whole, unusually large crops and large herds and flocks. Other factors, such as prices and freight rates, the growing use of agricultural machinery, the prosperity of agricultural fairs, increase in population, the occupation of new lands, and public agitation in favor of increased transportation facilities furnished testimony to the same effect. But in the very beginning of the war two contrary factors were very strong, — the crash of the wildcat banks and high freight rates.

Many banks in Illinois, Wisconsin, and Indiana had, as the only security of their circulating notes, the bonds of the border and slave states. These bonds secession sent on a wild career of decline, which grew worse and worse after the opening of actual hostilities. Deprived in this way of the means of redeeming their notes, many of the Western banks, especially the small ones in the country, closed their doors; and the bonds were sold at auction for the benefit of the note-holders. If we say that, on the average, these were sold for 80 cents on the dollar, which is a high estimate, the loss to the people of Illinois, where the bank-note circulation was $12,000,000, was over $2,000,000. Eighty-nine of the 110 banks of the state were ruined; 39 in Wisconsin, 27 in Indiana. These failures of the small country banks fell heavily on the farmers.

The losses occasioned by high freight rates were just as widespread as those due to poor banking. The enormous grain shipments of 1861, accompanied by the closing of so many routes seaward, — the Mississippi River, the Baltimore and Ohio Railroad,

and, with the coming of the winter, the Great Lakes, — found the railroads and other transportation lines unprepared. They were new, and had never handled heavy traffic. Much freight had to be turned away, and freight rates went up with a bound. The aggregate freight rate from Chicago to New York *via* Buffalo, by lake and canal, for a bushel of wheat rose suddenly from $0.1725 in July until it reached $0.3894 in October of the same year, — over 100 per cent increase, whereas in the corresponding three months of 1860 the customary rise in the autumn had been but a little over 66⅔ per cent. The West was frantic, but helpless before the transportation lines; for, while the freight rates advanced so very fast, the price of spring wheat in New York in the same time, — July to October, — went only from 72 cents to $1.15, — 50 per cent increase in the wholesale price paid to farmers, to be set over against the 100 per cent increase in freight rates. Press and public and state legislatures were loud in complaint. Large crops were of no avail to farmers if transportation lines took all the profits.

The sequel is important. In October, 1864, after the depreciation of paper money had been constantly raising prices in general for almost three years, the freight on a bushel of wheat, Chicago to New York by Buffalo, *via* lake and canal, was only $0.27, almost $0.12 less than in October, 1861, and in not a single month from 1861 to 1864 was the figure of October, 1861, again reached. On the other hand, the price of a bushel of spring wheat in New York in the same interval (October, 1861, to October, 1864) jumped from $1.15 to $2.35 in July, 1864, $1.85 in October, and $2.28 in January, 1865. Similarly, between the same two points over the same route, the freight on a bushel of corn increased, July to October, 1861, from $0.1581 to $0.3563; while the price per bushel of corn in New York advanced only from $0.46 to $0.54. But in October, 1864, the same freight was $0.2381, while the price per bushel was $1.56 in July, 1864; $1.58 in October; $1.86 in January, 1865. Again, in the fall of 1861 the highest price paid for a live-stock car, Chicago to Buffalo, was $95; in the fall of 1864, only $130 for the largest cars, $105 for smaller ones. But the price of live cattle in the

latter year was 100 per cent more than in 1861, and of live hogs 200 per cent more. Thus we arrive at a most interesting and important result: the prices of agricultural products in 1864 and the first part of 1865 were 100 per cent to 200 per cent more than in 1861, while freight rates for grain were less than in 1861, and those for live stock advanced but slightly. This rise in farm products was greater, and lasted much longer, than the rise in freight rates. Never had the products of the farm so great a cash value. For their crops the farmers were getting not only the increased nominal value which an inflated currency produced, but in addition the part of this increase, and more, which naturally would have been added to the freight rates. This remarkable result, following two good years in 1862 and 1863, was rich recompense for the losses of agriculture in 1861, and a cause of great buoyancy and prosperity. The amount of debts and farm mortgages paid off during the war was vast.

The use of labor-saving machinery on the farms had already begun when the war opened, but was largely extended during the struggle. Mowers and reapers were yet new; only on the largest farms of the West were they common. The wheat drill was not common in any section. As soon, however, as men began to go to war, the increasing use of new labor-saving machinery was as striking a feature of farming as were the large harvests. The new devices were necessary to make up for the scarcity of laborers. But for them, so we are assured from many sources, a large part of the crops could not have been gathered. In 1864 over 70,000 mowers and reapers were manufactured, — twice as many as in 1862, and many more than in any year before. The manufacturers could not supply the demand. But a small proportion of these were sold out of the United States. The horse-rake was likewise recognized as an efficient labor-saving device, and its use was rapidly extended. Many new harrows, grain drills, corn planters, and steam threshers were put on the market. At the agricultural fairs, both state and county, which, with some diminution in 1861, were held throughout the war, attended by the usual crowds, and meeting with the usual successes and failures, the exhibitions of the new

machinery afforded the chief attraction, and aroused the greatest possible interest. Only one exhibit compared with them in popularity, — another comparatively new labor-saving device, — the sewing machine.

There was definite increase of population in all the agricultural states, as shown by the census and by the school statistics. Illinois, by the United States census in 1860, contained 1,711,915 people; in 1865, by the state census, 2,141,510, — a gain of 430,000. The number of scholars of school age rose from 472,000 to 580,000; the number of teachers increased by 2500. Wisconsin in the five years gained 90,000 population, 47,000 children of school age, and 460 teachers. Minnesota, the newest state, gained 78,000 people, and showed an increase of 900 teachers. Iowa gained 180,000 people; Kansas, 35,000; and Nebraska, 30,000. Aside from natural increase, one source of the increase in population was foreign immigration, attracted partly through the active personal efforts of agents in Europe, sent out by states, railroads, and private individuals, partly through descriptive pamphlets, which were sent broadcast. From 1861 to 1865 some 45,000 immigrants, on landing in New York, continued their journey to Illinois; 23,000, to Wisconsin; 7000, to Iowa; and 5000, to Minnesota. There were many refugees from the border and slave states, especially in Illinois. Although it is impossible to measure this movement, numerous references in the press and in the reports of railroad presidents leave no doubt that it was strong. In 1863 it was reported that one-third of the land sales of the Illinois Central Railroad were to these Southern settlers.

Then there was immigration from other states, especially from the East, where there was a pronounced tendency towards depopulation of country districts and small towns. In New York State, out of a total of 948 cities and towns, there were 505 that decreased in population from 1860 to 1865, 463 of which had shown an increase in 1860 over 1855. In Massachusetts, out of a total of 385 cities and towns, 197 showed a decrease in 1865 over 1860, and 102 of these 197 had shown an increase in 1860 over 1855. The same conditions existed in Rhode

Island. Some of this drift of population away from these rural districts of the Eastern states was westward. The secretary of state of the state of New York, impressed by the shifting population of that state, sent out circulars inquiring the probable causes of the changes; and in about 230 replies received we find that 65 towns attributed their loss to emigration, chiefly to the West. Newspapers and railroad reports add their testimony to the same effect. St. Paul (Minnesota), a typical town of 13,000 in the growing sections of Minnesota, in the five years from 1861 to 1865 received 2200 persons from other states.

Another strong indication of the growth of population in the agricultural West was the constant occupation of new lands in every year of war. The Illinois Central Railroad, in the counties bordering along its lines, in 1860 sold 53,841.70 acres; in 1861, 102,247 acres; in 1862, 87,599 acres; in 1863, 221,578 acres; in 1864, 264,422 acres; in 1865, 154,252 acres. These heavy sales were, moreover, not to speculators, in large amounts, but to a large number of holders, in small amounts. In 1862 and 1863 approximately 6000 buyers, many of them from the Southern and border states, took an average of less than 60 acres each. During the whole war the counties along the line of the railroad grew in population 430,000. In other states, — for example, in Minnesota, — the railroads were actively disposing of their lands.

The state and government lands were also filling up. Wisconsin sold 340,000 acres of school lands, swamp lands, and university lands; Minnesota, 155,000 acres of school lands. Under the Homestead Act, by the terms of which the general government gave away to actual settlers (not to speculators), for a nominal fee, farms of 160 acres each, 140,988 acres were taken up in the various states and territories from January 1 to July 1, 1863; 1,261,592.61 acres from July 1, 1863, to July 1, 1864; and 1,160,532.32 acres from July 1, 1864, to July 1, 1865, — more than 21,600 farms occupied in two and a half years by permanent settlers. Of these homesteads 7864 were in Minnesota; 2211, in Wisconsin; 711, in Iowa; 1755, in Nebraska; 3115, in Michigan; 2067, in Kansas; and a smaller number, in several other states and territories. The government disposed of much land in

other ways. There were cash sales amounting to one-half of the homestead entries, large gifts to the veterans of the Revolutionary War, the War of 1812, and the Mexican War, and gifts to various railroads and to agricultural colleges.

Two contrary movements, tending to reduce population in the West, must not be overlooked, — a further migration to the newly opened mines west of the Missouri River and the formation of armies. In every year of the war there was overland travel across the plains to Colorado, where gold was discovered in 1858; to Nevada, where silver was discovered in 1860; and to Idaho, where gold was discovered in 1863. The excitement in 1863 and 1864 in Iowa, Missouri, and Illinois, over the discoveries in Idaho may be taken as typical. Maps, suggested routes, and descriptive articles abounded in the newspapers of St. Louis, Chicago, and other cities; and when the spring of 1864 opened, hundreds of prairie schooners started overland westward, and scores of boats ascended the Missouri River. On a single day in the early summer 420 wagons were observed to cross the Missouri River at four different points in Nebraska. This represented 2000 people. In a letter from Denver the readers of the *Boston Journal* were informed that 10,000 people were on the road between the Missouri River and Denver, all bound for Idaho. A certain judge, journeying from Fort Kearney to St. Joseph, declared that on no day was he out of sight of wagons, on one day he met 400 wagons. It was certainly a strong movement, but there were special reasons for it aside from the gold fever: first, the disturbed conditions in Missouri, torn as the state was by the fierce struggles of radicals and conservatives, and harassed by bushwhackers; and, second, the approach of the draft. It is significant that the governor of Iowa assumed by proclamation to prohibit any leaving that state until after the draft. The rush to Colorado and Nevada earlier was similar. In 1860, one year after the excitement in Colorado began, the census takers found 32,227 people in the territory. Her estimated population in 1864 was 75,000. Nothing accurate measures the migration to Nevada, although it was roughly estimated that 30,000 went there in 1861. Thus through the war there was a continued migration away from the leading farming sections.

All the states and territories we are considering furnished men for the armies. Up to December 1, 1864, Illinois raised 197,000 soldiers; Iowa, 70,000 up to December 31, 1864; Wisconsin, 75,000 up to December 31, 1864.

And yet, despite this drain of men, the West grew. Statistics of population, immigration, and the sale of new lands furnish a body of evidence that cannot be gainsaid. They show the arrival of new people, the making of new farms, a continued progress in Western agriculture while war was raging in the South. It was the new settlers, aided in part by labor-saving machinery, who reaped the usual crops and the annual increase thereto, and clinched the prosperity of the West.

A further illustration of the growth of the West is to be seen in the sway of the Western markets over the rival commercial cities of the East. The chief aim of the seaboard cities, in their attempts to extend their trade, was to secure improved transportation facilities westward. New York, by the construction of the Atlantic and Great Western Railroad, secured new connections with the lake route at Cleveland, and also with Cincinnati and the Southwest. In a great ship-canal convention, attended by two thousand people and presided over by the Vice-President of the United States, New York joined her interests with Chicago in memorializing Congress to improve, for military and commercial reasons, the Illinois and New York canals. This she was led to do by Chicago's threat to send her grain seaward over the Canadian and St. Lawrence route. Philadelphia completed a new railroad to Erie, to compete with the new Atlantic and Great Western, and, in opposition to the Chicago-New-York canal schemes, favored the improvement of the Ohio River. She also secured new connections with Cincinnati and Chicago. Boston, with only one road to the West, endeavored to divert the terminus of the Grand Trunk from Portland to herself, to tap that road at Ogdensburg, New York, to divert the Erie Canal traffic at Albany by completing the Hoosac Tunnel, and to build a new road to the terminus of the Erie at Newburgh, New York. The obvious explanation of the great public interest in these and similar transportation projects is that the West appealed to all as

a valuable market. There was, of course, the desire to find a new market to take the place of the lost Southern trade, but in this search the transportation lines would not have been so eager as they were to reach out to the West if the West had not been prosperous.

To this survey there is but one possible conclusion. In the middle and last part of the war Western farmers enjoyed vigorous prosperity; there was steady progress in the size of the crops, in the extent of the cultivated area, and in population; profits were normal in the middle of the struggle, and in the last part of it extraordinarily high. The Westerners themselves claimed prosperity for their section, and the business interests of the East, in their endeavors to expand, recorded their belief in the same prosperity.

[Great credit must be given to the national government for its wise and far-seeing legislation in favor of Western interests. In 1862 the Department of Agriculture was taken away from the jurisdiction of the Patent Office, where it was pinched and inefficient, and set up as an independent bureau. There were the Homestead Act and the Agricultural Land Grant Act, and an act in encouragement of immigration. Colorado, Arizona, Dakota, Nevada, Idaho, and Montana were organized as territories, and Kansas and Nevada were set up as states. Colorado and Nebraska refused statehood. Rich government subsidies were guaranteed to the Union Pacific Railroad, with its branches in Kansas and Nebraska, and also to the Northern Pacific. In every year of the war armed forces gave protection from the Indians.

Mitchell, in "History of the Greenbacks" (p. 388), says, "It is safe to conclude from these figures that the farmers of the loyal states were among the unfortunate producers whose products rose in price less than the majority of other articles, and that from this standpoint they were losers rather than gainers by the paper currency." "It seems very doubtful whether farmers, as a whole, did not lose more than they gained because of the price disturbances." This view is based on a study of but a single factor, and certainly must be changed by study of the other factors bearing on the situation.

AGRICULTURAL DEVELOPMENT IN THE UNITED STATES, 1900–1910

By J. L. Coulter

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ONE of the most remarkable changes which took place in the United States during the nineteenth century was the extraordinary expansion of agriculture. An entire continent was seized, the former inhabitants were dispossessed, and the land was divided among a new people and brought into general use. It seems impossible that this should have been accomplished in so short a time, and that it was accomplished will be set down as one of the marvels of all time. It is not my purpose, however, to dwell at length upon the extent of the movements of the last century, nor is it my purpose to go into detail with respect to the rapidity with which the changes took place. Inasmuch as the changes of the nineteenth century have already been presented to the public in many forms and are probably better known than those of the twentieth century, I propose to give most attention to the agricultural development of the first decade of the twentieth century.

Suffice it to say in opening that the very rapid movement looking toward the extension or expansion of agriculture into all parts of the country during the last century came almost to a standstill with the close of the century. The area available for agricultural purposes was very largely occupied between 1800 and 1900. It is true that there is still a large amount of land which must be made available, and the agricultural industry will continue to expand. Land now thought unavailable for agriculture will soon be found to be available or will be made so. Water will be drained from the land where there is too much, and carried to the

land where there is not enough; stones will be carried away; and stumps will be torn out. Land which is now thought to be too sandy or too gravelly will be brought into use by new scientific methods. Land which is now thought to be worn-out will be brought into bearing again. Some land which is now in forests will be used for agricultural purposes. In these and various other ways the agricultural area will expand during the twentieth century. But this expansion, when compared with the movement of the last century, will be of a different kind, and it will be small, indeed will be insignificant. The change in methods of farming, however, may be greater during the present century than during the last.

In proof of the above statement I wish to submit briefly some of the statistics gathered at the Census of 1910 and compare them with those gathered at the Census of 1900. The increase in acreage of land in farms during the decade amounted to only 4.8 per cent. The increase averaged approximately 4,000,000 acres per year. On the other hand, the increase during the thirty years before 1900 was almost 15,000,000 acres per year. This statement in itself is sufficient evidence of the fact that the high tide was reached before the close of the last century, and that the expansion since 1900 has been and doubtless will continue to be comparatively small.

Before leaving this phase of the subject attention should be called to the fact that although the movement doubtless will be slow, there is room for it to continue over a long period of time, depending on the needs of the people, scientific progress, and initiative displayed. Although the movement during the last century was rapid, only 44.1 per cent of the land area of continental United States was actually included in farms in 1900. In 1910 this had increased to only 46.2 per cent. Thus, between 1900 and 1910, 2.1 per cent of the entire land area of the country was brought into farms. By quoting these figures I do not mean to leave the impression that all of the other 53.8 per cent can ever be brought into farms. This represents the land in mines, the mountain areas, the land occupied by cities, towns, and villages, the railroad rights of way, the public highways, deserts, swamps,

and forests. Much of this land, however, can be made available for agriculture and much will be brought into use. During the last century it was possible for the movement to be rapid because special knowledge and advanced scientific principles were unnecessary. Natural fertility of the soil, plenty of land available, and advantageous climatic conditions made rapid advance possible. The movement of the twentieth century must be very different from that of the nineteenth.

To say that the amount of land in farms increased very slowly during the last ten years, and that the amount of land easily available has been reduced to a very low ebb does not mean that further agricultural development is limited to the bringing of new land into farms. Much of the land which is at the present time included in the farms of the United States has never been improved. The census reports for 1900 showed that only 49.4 per cent, or slightly less than one-half, of all of the land in farms was improved. In other words, only 21.8 per cent of the total land area of the United States was reported as improved at that time. It would seem strange if only one-fifth of the total land area of the United States could be actually used for agricultural purposes. It may be noted, in passing, that much of the unimproved land is also used for agricultural purposes, inasmuch as it is used more or less for grazing. Yet the total income from the use of this unimproved land is very small. It would seem that the farmers of the United States, inasmuch as they were free to choose the best land available at the time they became farmers and inasmuch as they have now looked over the entire country, would choose land which could be most readily improved, and therefore it is very likely that the lands now in farms in the United States are in the sections most adapted to agriculture. It is, therefore, reasonable to conclude that much of the development of the twentieth century must turn to improving land already in farms but which in 1900 was woodland or other unimproved land. I have already noted that during the first ten years of the new century the increase in acreage of all land in farms was only 4.8 per cent. During this same period, however, the increase in improved land in farms was 15.4 per cent. Assuming that

only 15.4 per cent of the land brought into farms during the decade was improved during that time, it is clear that nearly 58,000,000 acres of land which was in farms but unimproved at the beginning of the century was improved between 1900 and 1910. In 1910 the improved land in farms represented 25.1 per cent, or about one-fourth of the total land area of the United States, and represented 54.4 per cent, or slightly more than one-half, of all land in farms. It is reasonable to believe that as we proceed in the new century, much of the woodland and other unimproved land in farms, situated as it is in the most favorable farming regions of the United States, will be improved and developed.

Attention was called above to the fact that in 1900 only 49.4 per cent, or slightly less than one-half, of all land in farms, or only about one-fifth of the land area of the United States, was reported as improved. The census of 1900 showed that in 1899 only 283,218,280 acres of the improved land were devoted to crops for which it was possible to secure a statement of acreage reports. Thus in 1899 only 68.3 per cent of the improved land in farms was actually used for cropping purposes. In other words, only 33.8 per cent of all land in farms was reported to be in cultivated crops. This was only 14.9 per cent of the total land area of the country. The census of 1910 presents a corresponding report. In 1909 only 311,293,382 acres of land were reported as actually in crops for which acreage reports were secured. The crops with acreage reports, therefore, occupied only 16.4 per cent of the total land areas; 35.4 per cent of the total land in farms; and 65.1 per cent of the total improved land.

The question necessarily arises as to the use made of improved land not accounted for in 1909 and 1899. These statistics have been criticized, it being contended that much land was reported as improved which should in fact be reported as unimproved. Having been intimately associated from its beginning with the census of agriculture taken in 1910, but with no desire to defend it if it should not be defended, I wish to call attention to the fact that in 1909 the area reported as improved, but for which no crops were specified, must have existed in the form reported in order to represent current conditions. In the first place, no

acreage report was secured for vineyards and orchards. Without attempting to make an absolute estimate of the probable number of acres of improved land devoted to these branches of agriculture, it is easy to show that at least 8,000,000 acres of land, probably 10,000,000 acres, were used for these purposes in 1909. Much more important than the land occupied by fruit and nut trees and vines is the very large improved area in pastures. In the northeastern part of the United States especially, where the farmers have learned to rotate their crops and where the live-stock industry is important, improved pasture land is an important feature of the average farm. It is my belief that in a large part of the country the improved land not reported in specified crops is largely used as improved pasture land. In other parts of the country, where rotation and diversified agriculture have not been introduced, it is very common to leave land lying fallow after it has been cropped four or five years in succession. This land is reported as improved although not actually in use in 1909. In addition to the vineyards and orchards it is easy to account for about 20,000,000 acres of land in the house yards, barn yards, and lanes of the farms of this country. Even this estimate allows only 3 acres for each farm.

One of the movements of the present century must be a more complete utilization of the improved land. Land lying fallow must be brought into constant use; land now reported as improved pasture must be made more productive, and it may even be part of the movement to do away with improved pasture land in due course of time, inasmuch as larger quantities of product could be raised on the same land and fed to the animals in another way; and woodland and other land not improved must be converted into good pasture land.

The expansion in agriculture during the twentieth century will therefore be in marked contrast to the expansion during the nineteenth century. During the last century, as noted above, the great movement was to the West, — the ordinary course was to locate a piece of land which required comparatively little labor to bring it into use, claim it, and convert it into a farm. The movement during the twentieth century will be along four distinct

lines, each different from the movement of the nineteenth century. Briefly, the first of these will be to make farms out of land not now in farms by draining wet places, irrigating dry places, pulling stumps, moving stones, and the like. The second will be somewhat similar to the first. It will be to improve the woodland and other unimproved land now in farms by the processes noted above. The third will be to put into active and more constant use the land already reported as improved. This means the elimination of summer fallow and better utilization of other land reported as improved but not accounted for in the report of specific crops. The fourth, unlike the third, will be the movement towards more intensive cultivation, better farm methods, and better organization of the farm work.

Now the four movements which I have indicated above as possible and, indeed, as necessary, if the food supply of the United States is to be maintained at its present level during the twentieth century, have already begun. But they are so much slower than the increase of population that agriculture has fallen far behind and is at the present time falling further and further behind. There is no question in my mind that this failure to keep pace with the general industrial movement of the country is one of the most important causes of the high cost of living so much talked about at the present time. Unless some of the movements indicated above progress with much greater rapidity than now, the high cost of living will go even higher.

When the old movement stopped, when the frontier had disappeared, when the people commenced to say to themselves that there was practically no more free land, they turned their attention more and more towards other activities. They turned to manufacturing, to transportation, to the trades, and to the professions. This fact is well known to all who have observed closely, and can also be demonstrated statistically. The actual extent of the movement should be briefly set down in order that the entire situation may be made clear. During the first ten years of the present century the number of farms in the United States increased 10.9 per cent. This was clearly due to the splitting up of many large farms; since, as already noted, the amount of land

in farms increased only 4.8 per cent. Further, this increase of 10.9 per cent in the number of farms accounts very largely for the increased acreage of improved land in farms (15.4 per cent), as also the increased acreage of land in crops (9.9 per cent). In contrast to the increase in the number of farms, the increase in the rural population was 11.2 per cent. It would appear that the increase in the population of towns and villages with less than 2500 inhabitants was not much greater than the increase in the number of farms. In contrast to this comparatively small increase in the number of farms and in the rural population, the increase in the urban population amounted to 34.8 per cent. With these facts before us, it is easy to see that agriculture had reached practically its limit in 1900, so far as following the old method of expansion was concerned, and also that the four movements to which I referred had not gotten well enough started to keep pace with the increase in population which is rapidly concentrating in cities.

During the nineteenth century the farmers produced very much more than the people of the United States could consume, and the surplus was shipped to foreign countries. As agriculture developed less rapidly and as the proportion of the people who lived in cities increased more rapidly, the exportation of the raw materials of agriculture necessarily decreased. We have now reached a stage in the history of this country when farmers in average years do not produce much more of the raw materials used for food, beverage, and clothing than is needed within the country. In poor years the production may not in the future equal the demands of the consumers. In exceptionally good years it will be possible to export a considerable amount of raw material or reserve it for the bad years to follow. I think it is very doubtful whether the four new movements towards agricultural development which have been indicated above will be more than sufficient to keep pace with the movement of population. If, by inaugurating these four movements, it is impossible to keep pace with the population, it will be necessary in the future to resort to the importation of supplies.

Inasmuch as development during the first decade of the new century was not as rapid in agriculture as in other industries, the

farmers have been placed in a more or less advantageous position because of their ability to force up land values and take advantage of the increased pressure. This is true, however, only of those farmers who have become landowners. There are at the present time about 6,362,000 farmers in the United States. Only about 4,000,000 of these own all or a part of their farms, and many of those who own their farms have not paid the entire purchase price. The point that I wish to make is that those who have title to their land,— whether they have the land entirely paid for or not,— are being placed more and more in advantageous positions. Land values during the next half century will change greatly. Though in many districts doubtless the values are at the present time too high, generally speaking they will advance. The movement will be in two directions. One of these will be a readjustment downward to a reasonable level, and the other will be a readjustment upward to conform to average values in other parts of the country.

I have outlined above briefly the characteristics of the movement during the nineteenth century and the characteristics of the movement which is likely to take place during the first half of the twentieth century, and have quoted some statistics to substantiate the conclusions. In order to show the extent to which this movement actually is taking place, it is worth while to quote more of the results of the census of 1900 as compared with those of the census of 1910. In 1900 the average value of all farm property per acre of land in farms was $24.37; in 1910 it was $46.64. This is an increase of 91.4 per cent during the decade,— an increase almost equal to the total increase of all past time. This large increase was due more to change in the value of land than to change in value of buildings, implements and machinery, or live stock. The average value of land per acre (without buildings or equipment), for the United States as a whole, was $15.57 in 1900 as compared with $32.40 in 1910, — an increase of 108.1 per cent. Land is, therefore, clearly the most important factor. In contrast, the average value of buildings per acre of land in farms increased from $4.24 to

$7.20; that of implements and machinery from $0.89 to $1.44; and that of live stock from $3.67 to $5.60.

Another way to show the movement is to study the average value of farm property per farm. This, however, is not as satisfactory a basis as the average value per acre of land, because of the double movement. Between 1900 and 1910 the average size of farms decreased from 146.2 acres to 138.1 acres. This decrease of 8.1 acres, or 5.5 per cent, in the average size of farms counterbalanced in part the increase in the average value of all farm property per farm. On the other hand, the average acreage of improved land per farm increased 4.2 per cent, the decrease being entirely in the unimproved land. The increases, however, are not as large as they would have been had the farms remained the same in size. The average value of all farm property per farm for all farms in the United States was $3563 in 1900, whereas in 1910 it was $6444. The increase in the value of land alone was from $2276 per farm to $4476 per farm; that of buildings was from $620 to $994; that of implements and machinery was from $131 to $199; and that of live stock was from $536 to $774.

When all of these facts are brought together, it becomes clear that during the first ten years of the new century the increase in quantity of farm property was very small. I have already noted that the increase in the acreage of land in farms was only 4.8 per cent. Since the number of farms increased only 10.9 per cent, I think we may safely assume that the number of sets of farm buildings increased probably not more than 10.9 per cent. Doubtless during the decade there were many additional buildings added to those already on farms; but the number of new buildings erected was probably far short of the increase reported in value of the farm buildings. The increase in the acreage of improved land in farms was given as 15.4 per cent. We may assume that the increase in the quantity of implements and machinery was at least 15.4 per cent, and since the use of implements and machinery is increasing in agriculture more or less rapidly, we may assume that each farm has added to its supply of

these classes of equipment; but I think we are safe in assuming that the quantity of implements and machinery did not increase as rapidly as the increase in value reported. Statistics are available showing the increase in the number of each class of domestic animals, as well as of poultry and bees, on farms, and the results show clearly that the increase is largely in average value per animal and only to a very small extent in the number of animals. The movement, therefore, during the first decade of the new century was clearly a very small increase in the quantity of agricultural property, but an extraordinarily large increase in the reported value.

When the quantity of farm property and farm production are under consideration, it is easy enough to predict that the movement of the next half century will be along the lines indicated earlier in this paper (draining of swamps, irrigation of arid and semi-arid lands, fertilizing worn-out land, rotating crops in the most advantageous way, cultivating more intensively in order to increase production). It is also easy to predict that the rate of increase in the quantity of property will probably never again be as high as it was during the nineteenth century. But it would be hazardous even to attempt to predict what the movement will be with respect to the values of farm property, further than the readjustment in land values indicated above. We should keep constantly before us, however, the remarkable fact that the increase during the last ten years in the value of farm property in the United States is greater than that which had taken place from the landing of Columbus down to 1900. It would seem reasonable to contend that this movement could not continue at the same rapid pace; and yet we cannot discover counteracting forces.

Many reasons have been given from time to time for the increase in the prices of almost everything which can be sold and purchased. It is doubtless true that the various reasons for the increase in prices of all other articles of exchange apply also in the case of farm land and equipment. I wish only to add some of the special reasons why farm land has increased in value so rapidly during the last decade. Free land being practically a

thing of the past, — no longer available for those who wish to take up agriculture, — the prospective farmer was forced to start in a new way. Instead of moving to the frontier and depending upon the labor of himself and family to build up a farm, he was forced either to buy land or to start as a tenant on land already in some other person's farm. The number of people wishing to buy land or to become tenants was thus increased, — being equal to the former number in this class and swelled by all those who otherwise would have gone to the frontier. The demand exceeded the supply. It was natural that the owners of land, finding more buyers than formerly, and finding more applicants among those who would become tenants than formerly, were able to secure either a larger price for the farms which they sold or a larger cash rental (or equivalent) for the farms which they leased. This problem, however, remains: if the farm did not produce more goods, or if the goods produced did not sell for higher prices, the prospective purchaser would be unable to pay the higher price for the land or the higher amount for rent, and therefore higher land values and higher rents would have been impossible, unless the new owners and tenants were reduced to a lower standard of living than formerly or unless their surplus earnings of former years were reduced. That land values did go up, that the standard of living did not go down, and that farmers in the past were not able to save large amounts of their savings are, I believe, established facts. The extent to which land values increased is also an established fact. It is natural, therefore, that we should at once ask the question, Was the increase in price which the farmer received (whether due to the increase in quantity of goods produced or not) sufficient to warrant the increased capitalization of farm lands?

The total value of the crops produced by the farmers of continental United States in 1909 was $5,487,161,223, as compared with $2,998,704,412 in 1899. There was, therefore, an increase in the total value of crops amounting to $2,488,456,811, or exactly 83 per cent. For our purposes we must assume that the figures here given represent the value to the farmers of all crops which they produced. No doubt these figures are not exactly the

amount which they received for their crops, because in many cases the crops were fed to animals on the farms. But the values given represented the amounts which farmers could have got for the crops had they sold them in the local markets. For our purposes it is sufficient to state that the figures here quoted represent the farm values of all farm crops for both 1909 and 1899. In order to arrive at a figure representing the average value of all crops per acre of land in crops, I have assembled for 1909 and 1899 all crops for which it is possible to secure satisfactory acreage reports and value reports at both censuses. For this purpose it was necessary to eliminate an important group of farm products, namely, orchard fruits, grapes, tropical fruits, and nuts. In these cases it is almost impossible to secure a statement of the exact number of acres involved, inasmuch as hundreds of thousands of farmers have small numbers of fruit trees in and around their yards for which it is impossible for them to report acreage. But inasmuch as we are able to eliminate the values of these crops for both years and do not include the acreage figures, the figures which remain are comparable. It should be noted in passing that these crops are far from the top of the list when we consider all farm crops. Several small crops must also be eliminated, but these are, practically speaking, insignificant. Among these are maple sugar and syrup, for which there were no acreage reports, and also the forest products of farms. The total value of crops for which reports of acreage were secured in both 1909 and 1899 amounted in 1909 to $5,073,997,594, and in 1899 to $2,768,339,569. In both cases they amounted to more than 90 per cent of all crops as measured by value. The increase in the value of these crops was $2,305,658,025, or 83.3 per cent.

Turning now to the acreage of these crops, I wish to note that in 1909 the acreage of all crops with acreage reports was 311,293,382, and for 1899 the acreage was 283,218,280. The increase in the acreage, therefore, amounted to 28,075,102 acres, or only 9.9 per cent during the decade. It is perfectly clear from these figures, even if we went no further, that the average value of farm crops per acre of farm land under cultivation was greatly increased. It amounted to $16.30 in 1909 as compared with

$9.77 in 1899, an increase of $6.53 per acre. This is an increase in the average value of crops per acre of 66.8 per cent. With these figures before us it is easy to see at least one of the reasons why the reported value per acre of farm land has advanced so rapidly. The total value of farm land increased because in the first place there was an increase in the total quantity of land in farms amounting to only 4.8 per cent. In the second place, there was an increase in the improved land in farms amounting to only 15.4 per cent. These changes in themselves warrant a material increase in the total value of farm land, but they do not justify an increase such as I have recorded above. When we turn, however, to the income from farm land and find that the average value of crops per acre has increased 66.8 per cent, it is not surprising that the farmers of the country have reported their lands at a higher figure than formerly. The remarkable feature of the reports is that the farmers should be able to judge so accurately the justifiable increase based upon the increase in the quantity of farm land combined with the increase in acreage of improved farm land, which in turn is combined with the increase in value of crops per acre of land actually in crops.

Before leaving the subject it will be well to refer to other causes for the increase in land values. Prior to 1900 (approximately) land was available in such large quantities that many persons wishing to buy land were unwilling to do so because of its producing capacity only. Much of the free land was equally as productive as the land for which the buyer must pay a price. Therefore the intelligent buyer bought because of desirable location and advantageous situation. Probably a considerable part of the price paid was paid because the land was favorably located on a river or lake, or because it was gently rolling or the water was good, climatic conditions favorable, or the general outlook promising. Another part of the price was paid because of the adaptability of the farm. It was easily tilled, the fields were regular in size, there were no obstacles, the soil worked up well, or some other characteristic of this sort prevailed. But probably more important than either of these two facts has been the advantageous situation with reference to the market. Either the farm was close to the

railroad where supplies might be secured, or the roads were good from the farm to the city or to the railroad, or the farm was advantageously situated with reference to large population centers and good markets. Because of an advantageous situation freight rates on supplies to the farm were low, as also were freight rates on the products from the farm. Thus the farmer had a larger surplus from his products and paid a lower price for supplies purchased than otherwise would have been the case. The surplus was attributed to the farm, and higher land values resulted. In addition to these reasons for differences in land values in the past, a fourth reason must never be lost sight of. This fourth reason may well be referred to as the variations in Nature herself. Some land is most useful for the production of wheat, some for the production of cotton; and some land is naturally more fertile than other land. This natural adaptability has been capitalized and will be capitalized in the future. All of these reasons for wishing to own land, and added to these the desire for a home and a capitalization of the possiblities of the future, have become stronger in recent years.

Going one step further, I believe that the statistics collected by the Bureau of the Census in 1900 and in 1910 give a basis for deciding whether the higher value of crops per acre devoted to crops was due to the fact that more goods were produced on the land in use, or to a higher price paid for the goods which were produced. No prior census reports give a basis for such a study, and even the reports for 1900 and 1910 do not give a basis for a complete analysis of this subject, nor is the basis sufficient to state absolutely the extent to which each of these forces was an influence. I believe, however, that figures can easily be presented which show that the movement during the last decade has been almost entirely a change in the price received by the farmer for his goods rather than an increase in the quantity of goods produced. This is an important feature of the new-century movement.

What I have shown has been in the nature of an explanation of the rapid increase in the value of land and farm property generally. So far, no attempt has been made to prove that the increase in the average value of crops per acre was due to a

change in the price of the product rather than to a change in the amount produced. In order to show this we will pass from a study of the acreage of crops and the relationship existing between acreage and value, to a study of the production together with the relationship between quantity produced and value. The most important group of crops is the general group designated as cereals. Considering this as a whole, we find that whereas there was an increase of only 1.7 per cent in the number of bushels produced there was an increase of 79.8 per cent in the value. Clearly the increase here is due almost entirely to the increase in the value per bushel, not to any material increase in production. Turning our attention now to individual cereals, we find that there was an actual decrease in the quantity of corn produced of 4.3 per cent, yet at the same time an increase in the total value of the corn crop of 73.7 per cent. There was an increase of only 6.8 per cent in the quantity of oats produced, and yet there was an increase of 91 per cent in the value of that crop. Likewise the increase in the quantity of wheat produced was 3.8 per cent, whereas the increase in the value was 77.8 per cent. Without going into the same detail, it is sufficient to notice that in every other class, — barley, buckwheat, rye, kafir corn and millo maize, and rice,— the increase in value was much greater than the increase in quantity produced. The same thing is true in the case of such minor grains and seeds as dry edible beans, dry peas, peanuts, and flaxseed.

Turn now to other cases. For another crop of extraordinary importance,— that of hay and forage,— we find the same general story. There was an increase of 23 per cent in the number of tons produced, accompanied by an increase of 70.2 per cent in the value of the crop. The quantity of tobacco increased 21.6 per cent, while the value of the crop increased 83 per cent. An increase of 11.7 per cent in the quantity of cotton produced was accompanied by an increase of 117.3 per cent in the value of the cotton crop. It is unnecessary here to list all of the farm crops which I have considered. Suffice it to say that in every case where the quantity of crop and value of the crop have been reported I have found the same tendency. It is worth while to note that in this study it is possible to make comparisons in the production

of fruits and nuts. The quantity of small fruits decreased during the decade 7.9 per cent, while the value increased 19.8 per cent. The quantity of orchard fruits increased 1.8 per cent, while the value increased 68.2 per cent. Grapes increased 97.6 per cent in quantity but only 56.3 per cent in value. This item, however, needs explanation before it can be accepted. At the census of 1900 the farmers were instructed to report the value of grapes in their natural form whenever they were disposed of in that form; but whenever they were disposed of in the form of dried grapes or raisins, or in the form of wine or grape juice, the reported value should be the value of the finished product rather than of the raw material. At the census of 1910 the farmers were instructed to report in all cases the value of the grapes in their original form. The increase in the quantity of nuts produced was 55.7 per cent, whereas the increase in the value was 128.1 per cent.

Even if we went no further than this, there could no longer be doubt that the extraordinary increase in the total value of farm crops between 1899 and 1909 is attributable to higher prices rather than to larger quantities of the individual kinds of farm products. I do not wish, however, to stop at this point. I believe that it is possible to make an easy and almost exact calculation showing the extent to which the change in value of farm products is due to change in quantity produced and the extent to which it is due to the change in price. It is true that we cannot add together the quantities of cereals, hay and forage, tobacco, cotton, fruit, and therefore we cannot get the consolidated quantity by any process of weighting the units of measure. But it is possible to secure the average value per unit in 1899 for the individual crops for which both quantity produced and value were reported at both censuses. Having secured the average value per unit in 1899 we may multiply this into the quantity of the crop produced in 1909. In this way we shall secure the total value which would have been reported for each individual crop in 1909 if the average value per unit had remained the same as ten years earlier. In making this study it is necessary to eliminate certain crops, inasmuch as the values were not reported separately for a few minor crops in 1899, and further because quantities were not reported

for certain minor crops at either census. The quantity produced and the value, however, have been reported for something more than 90 per cent of all crops, as measured by value, both in 1899 and 1909.

The total reported value of the crops covered by the computation was $2,691,978,541 in 1899. The total reported value of the same crops was $4,934,489,828 in 1909. This is an increase of 83.3 per cent as compared with an increase of 83 per cent in the value of all crops, showing that the crops selected not only constitute approximately 90 per cent of all crops but also are representative of the whole. Had the average values per unit in 1899 prevailed until 1909 the total value of these same crops would have amounted to $2,962,358,477, which would have been an increase of only $270,379,936, or 10 per cent. This increase, I believe, represents very closely the actual increase in quantity of crops of all kinds during the decade. Having in mind all of the steps which were followed, it is extremely interesting to note how closely the increase in the acreage of crops with acreage reports approaches this increase in quantity of products.

It must be clear, therefore, that if only 10 per cent of the increase in the total value of crops can be accounted for by the increase in the quantity, that the remainder must be attributed to an increase in the average value per unit. The difference between $4,934,489,828, which is the 1909 reported value of the crops being compared, and $2,962,358,477, which would be the 1909 value of the crops being compared if the average values of 1899 had continued until 1909, must represent the excess of actual values of the crops of 1909 over the values of 1909 on the basis of 1899 average values. This excess amounts to 66.6 per cent and represents evidently the average percentage increase in prices. Attention is now directed once more to an earlier part of this discussion, where I called attention to the fact that the average value per acre of crops with acreage reports was 66.8 per cent higher in 1909 than in 1899. It must be clear from all of these figures that this increase in average values of crops per acre is due almost entirely, if not entirely, to the change in prices rather than to change in the quantities of farm products.

In conclusion, I desire to direct attention to several figures which have been given out by the Census Bureau representing the movement between 1900 and 1910. Inasmuch as the figure given above, 9.9 per cent, represents the increase in acreage of crops with acreage reports, and inasmuch as the increase in other crops must have been at approximately the same rate, it is proper to compare this item with other items of growth. Similarly, inasmuch as the figure given in the preceding paragraph, 10 per cent, representing the excess of the value of the crops in 1909 on the basis of 1899 values over the values of the same crops in 1899, is virtually the consolidated expression of the general increase in quantity of crops produced, it may be compared with other items which have been made public. I wish to call attention, in comparison, to the increase in the number of farms between 1900 and 1910. This amounted to 10.9 per cent. The figure was compiled independently by the agricultural division of the Census Bureau. In the same connection I wish to call attention to the increase in the rural population, — which, however, includes places under 2500 inhabitants, in addition to the agricultural population. The increase was 11.2 per cent. It should be noted that this tabulation was carried on by an entirely different and independent organization which was in complete charge of the population returns. That division has also reported that the increase in urban population amounted to 34.8 per cent. The movement during the last decade can clearly be summarized, therefore, as follows. There has been a very decided movement towards the cities. The increase in rural population, number of farms, acreage of land in crops, and quantity of crops approximated 10 per cent, whereas the increase in city population approximated 35 per cent. The farmers of the country have been unable to produce crops in proportion to the increased demands, their increase in production being only sufficient to supply the increased demands of the rural population and an increase of but 10 per cent in urban population. The prices of agricultural products have increased approximately 66.6 per cent, and at the same time there was an increase in the average value of crops per acre of 66.8 per cent. Accompanying this increase in the value of crops per acre (supplemented by a small

increase in the quantity of land in farms and improved land in farms) farm property has been capitalized anew at a figure sufficiently high to take advantage of the changed conditions.

In the discussion I naturally have been forced to use the figures for 1909 and 1899, since these are the only years for which definite and reasonably accurate statistics are available. The statistics for the other years are nothing better than estimates made by various individuals or government bureaus. It is best to hold to the absolute figures secured from the farmers, and therefore I shall limit the study to these two years. After a very extensive study of climatic conditions and general agricultural conditions for the two years thus necessarily selected I am ready to state my belief that they were typical or representative years, not abnormal in any material respect. In some districts conditions were exceptionally bad or exceptionally good in 1899, and the same was true of 1909. For the United States as a whole and for all crops which it is possible to bring into the analysis here presented, these years are as comparable as it is possible to find two years any distance apart.

It is true that the hope has been, and I believe I may say that the belief has been, that agriculture was increasing rapidly, if not keeping pace with the increase of population. The people of the United States have been more than willing to supply the Department of Agriculture, state agricultural experiment stations, and a great variety of agricultural schools, colleges, and lecturers with all of the funds necessary, believing that all of this pointed towards a larger production of goods as a basis for the food, beverage, and clothing supply of our people. Hundreds of millions of dollars have been expended for this purpose. It may seem that this expenditure has been in vain, since the average production of agriculture has not increased. But without it doubtless there would have been far-reaching decreases due to depreciation of the soil and failure of the farmers to maintain the average production secured when they first took charge. It is not my wish or purpose to discredit these agricultural agencies and institutions, which have been faithfully at work for over half a century. I believe thoroughly in the work which they are doing,

and in the high purposes which they have in mind. But hitherto the proportion of the effort expended by these agencies which has reached the actual farmer is comparatively small, and the amount absorbed by the farmers and put into practice even smaller. In other words, the work up to the present time has largely been experimental, or learning by experiment what ought to be done. Principles have then been taught in institutions to people who in turn have in mind the teaching of people to teach still other people. Up to the present time almost all of the work has been teaching various persons to teach; it has not been teaching the farmers to produce. Though hundreds of millions of pages of literature have been distributed among farmers, only a small percentage has actually been read, and only a small percentage of that read has been put into practice. It has taken almost all, if not all, of the education which has reached the farmers to date, to prevent any downward movement in the quantity produced per acre of land actually cultivated.

THE MOVEMENT OF WHEAT-GROWING: A STUDY OF A LEADING STATE

By C. W. Thompson

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AMONG the problems that arise in a study of wheat-farming are (1) the cause of the westward movement of wheat-growing and (2) the size of the most economical wheat farm. An attempt will be made in this paper to apply to the above problems the results of a study of a typical wheat state.

The following table indicates the growth of wheat-growing in Minnesota and her rank as a wheat-growing state:

	Bushels	Rank		Bushels	Rank
1850	1,401		1880	34,601,030	9
1860	2,186,993		1890	52,300,247	6
1870	18,866,073	12	1900	80,102,627	2

Crop failures in Kansas in 1902 gave Minnesota first rank for that year.

The growth thus made apparent has not been uniform, however. In 1860 each of the 9 leading counties produced above 100,000 bushels, as follows:

	Bushels		Bushels
1. Fillmore	391,350	6. Hennepin	135,715
2. Olmsted	232,469	7. Rice	130,433
3. Dakota	173,652	8. Wabasha	114,227
4. Winona	166,950	9. Houston	108,518
5. Goodhue	152,348		

The counties mentioned are in the extreme southeast portion of the state or near the Mississippi River in the region of the twin cities (St. Paul and Minneapolis).

In 1870 the leading wheat counties produced as follows:

	Bushels
Olmsted	2,117,054
Goodhue	1,815,403
Fillmore	1,687,424
Wabasha	1,476,643
Dakota	1,435,361
Winona	1,315,012
Blue Earth	725,879
Mower	673,017
Dodge	634,741

It is thus seen that in 1870 the leading wheat counties continued to be practically the same as in the previous decade. Six of the counties were now producing over 1,000,000 bushels each; while the leading county, Olmsted, containing only 648 square miles of territory, produced over 2,000,000 bushels, or 3268 bushels per square mile. This product becomes significant when we notice that thirty years later — in 1900 — the 2 leading wheat-producing counties, Polk and Ottertail, produced only 1362 and 1791 bushels per square mile, respectively.

In 1880 conditions within the leading wheat counties remained practically unchanged, though additional wheat fields, during the intervening years, had been added along the Minnesota River and in the central and northwestern parts of the state. While the wheat industry had thus been practically at a standstill in the older counties the increase in the total output of the state from 18,866,073 bushels in 1870 to 34,601,030 bushels in 1880 came from new counties into which the industry had been extended.

In 1890 there were 22 counties that produced over 1,000,000 bushels each. Of these the leading ones were Polk, Ottertail, Stearns, Renville, Lac qui Parle, Sibley, Meeker, Blue Earth, and Brown counties. All of these lie in the western half of the valley of the Minnesota River or on the plains in the central-western part of the state or in the valley of the Red River of the North.

In the meantime there was a rapid falling off in the older counties, as is indicated in the following table:

	Product in 1870 (In bushels)	Product in 1890 (In bushels)
Goodhue	1,815,403	604,327
Fillmore	1,687,424	156,728
Wabasha	1,476,643	305,388
Olmsted	2,117,054	198,992
Dakota	1,435,361	64,806
Winona	1,315,012	466,845
Mower	673,017	108,763
Houston	623,557	129,619
Dodge	634,741	132,900

Coming down to the year 1900, we find that there were 42 counties producing more than 1,000,000 bushels each; and out of these, 12 counties produced more than 2,000,000 bushels each. The 9 leading counties are given below:

	Bushels
Polk	4,128,620
Ottertail	3,941,160
Renville	3,698,160
Lac qui Parle	3,219,230
Stearns	3,022,230
Clay	2,593,390
Yellow Medicine	2,552,700
Redwood	2,529,620
Marshall	2,225,440

Thus the tendency of the wheat industry to shift northward and westward, as shown in the figures for 1890, is still further emphasized by those for 1900. Figures since 1900 show further movement in this direction. The valley of the Red River of the North, that part of the valley of the Minnesota River northwest from Blue Earth County, together with the plains lying immediately north and in the central-western part of the state, accordingly comprise today's great wheat-producing areas in Minnesota.

We are now led to inquire why such a shifting of the wheat industry has taken place. The answer to this query is important, for it explains not merely the cause of changes in farming within the confines of the state of Minnesota, but it will also account for that larger movement of the wheat industry from New York to Ohio and Illinois and thence to the great Northwest and the Pacific coast.

If we examine the kind of farming carried on in the south and southeast portions of Minnesota today, we shall notice that it is highly diversified. Creameries or cheese factories are found in every township. Barley, corn, or hay is raised in the place of wheat; and these products are not sold in the market directly, but are fed to cattle and hogs on the farm. The cattle are not raised primarily for beef, but rather for the milk from which butter and cheese — the direct products for the market — are derived. Meat, hides, etc., from the cattle — so far as they are marketed — serve in reality as a by-product.

Why have these farmers abandoned wheat-raising and taken up dairy-farming? The land is just as fertile here as in any part of the state. Just as many bushels of wheat per acre were raised in Olmsted County in 1870 as can be raised today on the best wheat lands of the Red River valley. The land in Olmsted County is as fertile now as it was thirty-five years ago. It is not, therefore, a difference in fertility or adaptability in soil or condition of climate that has caused the change. Neither can it be due to a difference in the contour of the land. The southern and southeastern counties of the state contain plains upon which modern agricultural machinery can be used as easily as in the Red River region. The cost of agricultural machinery, the price of wheat, the cost of farm labor, and the rate of interest charged on farm loans are all such as to give a relative advantage to the farmers in the southeastern counties rather than to those further northwest. The cause of the change must therefore be sought elsewhere.

When the southeastern counties of the state were first settled, wheat-growing was the kind of farming adopted. As the settlements were gradually extended northward and westward each locality in its turn adopted wheat-growing at first. It follows that

wheat production was deemed best adapted to the conditions of frontier agriculture. There are, however, certain localities in Minnesota not on the frontier which are nevertheless devoted to wheat-raising. Mention has been made of that part of the valley of the Minnesota River northwest from Blue Earth County. What does this region have in common with that on the frontier that it should be devoted to wheat production, while other localities have changed their mode of farming to that of dairying?

Those who recall J. S. Mill's theory of international exchange, as illustrated by the example of the five islands, will remember that each of his islands produced that in which it had a relative rather than an absolute advantage over the others. Similarly, it is evident that when a man has a choice between dairy- and wheat-farming he will choose whichever makes it possible for him to employ most efficiently the productive forces involved. On the frontier and along the valley of the Minnesota River northwest from Blue Earth County wheat-farming seems to pay better than dairy-farming. In the southeastern counties, however, wheat cannot be grown profitably, though just as good crops can be grown, with just as little labor, as in the northwest. But, since wheat-growing does not pay so well as dairying, it is evident that no one could afford to use his land for wheat-growing. Even if, as is often the case, the farmer is a successful wheat-grower, but entirely unfitted for dairying, still he could not afford to grow wheat, for the reason that the land has become too valuable because of its adaptability for dairying. He cannot afford to hold the land for wheat-growing when others will offer him what it is worth to them for dairying.

On the frontier the land is more valuable for wheat-farming. Now in either of these two kinds of farming the productive forces involved are land, labor, and capital. The farmer will ordinarily raise the product which, after paying rent to land and interest on the capital invested, leaves the largest amount of value as wages for his own labor. If either rent or interest be lowered and the value of the total product remains the same, it follows that the share going to wages will be increased. Accordingly, if land is free or very low in price, as on the frontier, the farmer will have little or nothing to pay as rent. After paying interest on the capital

invested he can retain what is left as wages. Hence, when a man farms where land is free, the aim will be to extend the use of a given amount of labor and capital over a large area, no additional expense being thereby added in the form of rent. The farmer will select the area from which his labor and capital can get the product of the largest total value possible. He will therefore adopt an extensive kind of farming, such as wheat-growing. As soon, however, as the land acquires a value, thus involving a definite expense per acre (regardless of the value of the product), the farmer finds it necessary to direct his farming so as to get a larger return per acre.

Whether the extensive or intensive kind of farming is the more profitable is thus seen to depend, from the standpoint of an individual farmer, upon the price of the land. The rise or fall in the price of the land depends partly upon the use to which it can be devoted. If one man uses a given area for wheat-raising and some one else thinks he can farm the same area more intensively and realize a larger net return per acre, the latter will be in a position to offer a larger price for the land than the former can afford to pay or to hold it at if he is the owner. In this way the wheat farmer will be "crowded out" from the higher-priced land or he will change to a more intensive kind of farming.

The question may now be asked, If a farmer can make more money by intensive cultivation on high-priced land, why can he not do the same with the more intensive cultivation on cheaper lands, and thus crowd out the wheat industry entirely? The answer has already been suggested. The farmer wants to realize as much value as possible. If by raising corn he can cover only 50 acres in a season, while by raising wheat he can handle 200 acres with the same labor and capital, he figures up which will give in return the largest amount of value over and above expenses, and decides his plan of farming accordingly. Where land is free or reasonably cheap, the more extensive farming will give the largest net returns and such farming as wheat-raising will pay best.

We thus see that, while the demand for land and therefore its price are determined partly by the use to which it can be devoted and partly by the general social conditions of the time and place,

the price of the land in turn helps to determine the kind of farming that is most profitable from the standpoint of the individual farmer. To the individual farmer wheat is an unprofitable crop in the southeastern counties of Minnesota because the land is too high. From the standpoint of society at large it may be said that the land is too high because other crops are more profitable than wheat. It is the individual farmer, however, who has to choose between the extensive or more intensive modes of farming, and whose decision has determined the movement of the wheat industry. We must look at the question from his standpoint, therefore, if we are to appreciate the cause of the movement. The reason why a man adopting the more intensive modes of farming can crowd out the wheat-farmer is that the former can pay a higher price for the land than the latter, because he can grow a more valuable crop than wheat. On the other hand, the reason why the wheat farmer under such conditions moves to the cheaper lands is that the added expense from increased rent on the high-priced land leaves a smaller net return to him than could be realized if the land were cultivated more intensively, while at the same time larger net returns will accrue by taking up cheaper lands.

This cause of the shifting of wheat-farming as applied to the state of Minnesota accounts for the movement of the wheat belt from east to west across the continent. In a general way the wheat belt of thirty years ago has the same advantages over the West that the southeastern counties of Minnesota have over those of the Red River valley. There are, however, two other conditions that have given the West a relative advantage over the East for purposes of wheat culture. Some of the eastern lands had through long usage been deprived of some of their fertility. This, however, had not been carried far enough to affect materially the movement of the wheat industry. More important than this is the fact that eastern farms were planned for the early kind of wheat-farming, before binders and reapers had affected the economy of wheat production. The farms were therefore so small in size that the individual farmer with his limited number of acres could not utilize the later improved machinery to its full capacity. The force of this will be more fully appreciated when

viewed in the light of the subsequent discussion on the most economical size for wheat farms.

We have already noticed that Olmsted County raised more wheat to the square mile of its area in 1870 than was done in our leading wheat-raising counties in 1900. This was at a time when the methods were very different from those of today. The binder could not be used for practical service before the early seventies. The farmers in Olmsted County and of Minnesota in general had to resort to the reaper and hire men to bind the grain by hand according to the plan of "binding stations." Four men would each have their quarter of the distance around the field in which all the bundles had to be bound for every round made by the reaper. The large amount of labor needed during harvest is, therefore, evident. When the binder first came into use, it was very expensive. Four hundred dollars was the least it could be bought for at that time. Ten years later the price still stood at a high figure. In the latter year (1880) the father of the present writer paid three hundred and fifty dollars for a wooden-framed Plano binder. It will be interesting to compare farming under such conditions with that of later times.

The census reports afford us figures by counties for the number of farms, acres of improved land, total value of farm implements and machinery, total expenditure to farm labor, and also total value of products. The last-named item is not given as such, but can be made up from figures for live stock and those for the value of products not fed to stock. The following table is made up from the above-mentioned items:

County	Value of Implements and Machinery per Acre of Improved Land	Average Number of Acres of Improved Land in the Average-sized Farm	Average Expenditure for Labor per Acre of Improved Land	Total Value of Product per Acre of Improved Land
Olmsted in 1870 . .	$2.63	84	$2.44	$14.24
Olmsted in 1900 . .	1.69	128	.73	13.94
Polk in 1900	1.62	150	1.29	9.43
Lac qui Parle in 1900 .	1.42	200	.95	9.72
Renville in 1900 . . .	1.42	166	.87	10.28

The kind of farming in Olmsted County in 1870 has already been indicated, also that used in this county in 1900. Figures for Polk, Lac qui Parle, and Renville are selected, because these were the leading wheat counties in the three main wheat sections of Minnesota in 1900.

We thus have before us three types of farming: first, wheat-raising with the reaper, as seen in Olmsted County in 1870; second, highly diversified farming for products such as butter, cheese, and pork, as seen in Olmsted County in 1900; and third, wheat-raising according to modern methods, as seen in the counties Polk, Lac qui Parle, and Renville, in 1900. The contrast in the value of implements and machinery per acre in 1870 and the values for 1900 is due to the very high prices of farm machinery in 1870. When the binders first came into use, the value of implements and machinery per acre became still greater. Thus the figures for this in Renville County in 1880 were $3.24 per acre. In the comparisons for 1900 the value of implements and machinery per acre is seen to be greatest in Olmsted County. It will be noticed, however, that the average size of farms is the smallest in this county. In the other counties the same amount of machinery is used on a larger number of acres, and the value per acre is accordingly diminished. For purposes of wheat-farming one set of machinery (one binder, one seeder or drill, one harrow) can do all the work on each of the averaged-sized farms of the counties referred to above. Where the farms are largest, therefore, and still use "one set," the implements and machinery are used with greatest economy and the value of these per acre becomes least. This explains why the figures for Olmsted County in 1900 are greater than those for Polk County, and also why those of the latter county are larger than those of Lac qui Parle and Renville. The reason why the figures for Lac qui Parle County are not smaller than those of Renville is due to the fact that the farms in the former county are so large that in a large number of cases one set of implements and machinery is not sufficient for the work required — in other words, more than one of some of the implements have to be used for the average farm. As far as the use of capital is concerned, therefore, the

figures point to the fact that farms of 160 or 170 acres each are the most economical.

The most economically managed of all wheat farms is that just large enough to utilize one complete set of farm implements and machinery to its fullest capacity. Since one laborer is needed for each set, it follows that in the above plan labor will also be utilized to its fullest capacity. That farm is the best managed and pays best on which the labor and capital expended are both thus utilized to their fullest extent. It may be urged that two men and two sets of implements and machinery ought to do just as well and perhaps better on a farm twice as large. They do not, however, for the reason that there is no economy from further organization, since one man with one set of modern farm implements and machinery has all the advantages organization can give. Moreover, when there is just one worker, that worker is in general practice the owner of the farm. Where more than one is needed, resort must be made to hired laborers. The last-named fact is important in determining why one set is more efficient *pro rata* than two. The work of an owner is always more careful and less wasteful than that of a hired laborer. The force of this statement can be fully appreciated only by those who have seen the work of the average hired laborer in the harvest field.

Turning our attention now to the average expenditure of labor per acre, we note that the figures for Olmsted County in 1870 are very high. The large amount of labor needed then per acre accounts for this. In the comparisons for 1900 the Olmsted farmer is found to expend less for labor per acre than the farmers of the other counties. His farming, however, is very different from that of the others. His work is largely concerned with stock; and for work of this kind the farmer's wife and children lend, in practice, a very helpful hand. Besides, the work is evenly distributed over the entire year. He gets along with comparatively little hired labor when his farm is of the average size. The wheat farmer, on the other hand, is confronted with certain busy seasons of the year, when a great deal of work must be accomplished in a very limited time. The need of hiring extra labor at such times is obvious. The figures for labor in the three

wheat counties are further evidence of the economy of the "one-set" farm of the proper size. It is true that wages per day for hired labor are not the same in the three counties. Thus Renville County is nearest the large cities, and gets labor the cheapest. Polk County is farthest away, and must pay the highest wages. After making due allowance for this, however, the relation still holds, as shown above.

Turning to the total value of the product per acre, we notice that the highest figures are those for Olmsted County in 1870. This was the result of wheat-farming under the reaper régime, and the high figures are due to the exceptionally high price of wheat at that time. The richest farmers in Olmsted County to-day will tell you that they got their "start" during those years. Although the value of the product per acre over and above the cost of labor and the cost of implements and machinery, as determined from the above figures, appears higher in 1900 under diversified farming than in the reaper era under high wheat prices (being $11.52 per acre for the former and $9.17 per acre for the latter), notice must be taken of another item of expense not shown in the above table. Reference is made to the wide contrast in the prices of land. This expense was very small in 1870. Now, however, the Olmsted farmer has to pay fifty or sixty dollars an acre for land (this means with buildings, fences, and other equipment, or total investment necessary to buy a farm). When rent on this is computed, the advantages of the wheat farmer of 1870 become evident.

We are now in a position to appreciate the meaning of a movement that has taken place in the wheat-farming regions of the Northwest during recent years. This is the breaking-up of the bonanza wheat farm. When the experiment on these large farms was first begun and a long series of machines and implements were put to work on the great plains, the power was so great and the scale of work so large that many believed the most economical method of wheat-farming had been secured, and that farming on a small scale was henceforth doomed to failure. Mere size of industry, however, does not insure efficiency. The latter can only be secured where labor and capital are combined with land in

such a way that each is utilized to its full extent. The waste possible in wheat-raising is very great. This fact must be taken into account more and more as the cost of raising wheat is increased. When land was cheap, the bonanza wheat farmer could let his great caravan of machinery, implements, and labor skim over the plains and the more ground they covered, the larger would be the net as well as the gross returns. With a rise in the price of land, however, a new item of expense had to be met and more value had to be secured from each acre used, if the business was to pay. The bonanza farmer had no way of getting more value from the land per acre. The small farmer, however, could add to the returns by more careful wheat-farming. He could save waste, and take an owner's interest in the field cultivated.

We thus see that the rise in the price of land, by means of which the diversified farmer crowds out the wheat farmer of southern Minnesota, enables the wheat farmer owning 160 or 170 acres to crowd out the bonanza farmer of the Northwest. In either process the movement is toward a kind of farming which produces more per acre. Though the rise in the value of the land is partly the result of the more intensive farming, yet the social and other advantages of a settled community are in themselves powerful factors in increasing this value, and, as already shown, the rise in value in turn forces a more intensive system of farming upon such communities.

The relative advantages of wheat-farming and the more intensive diversified farming can be further compared by means of the following data gathered from the United States census reports of 1900:

County	Total Acres of Land in Farms	Acres of Improved Land in Farms	Value of Land and Improvements (except Buildings)	Value of Buildings
Olmsted	405,889	327,419	$13,592,810	$2,684,110
Renville	584,659	500,199	13,563,070	2,358,530

County	Value of Implements and Machinery	Value of Live Stock	Value of Products not Fed to Live Stock	Expenditure for Labor
Olmsted	$555,160	$2,005,259	$2,559,762	$240,630
Renville	709,490	1,908,030	3,235,004	436,920

From the above tables the following has been compiled:

County	Improved Acres in Each Farm	Total Acres in Each Farm	Value per Acre of Land in a Farm, taking Total Acres	Value of Buildings per Acre of Improved Land
Olmsted . . .	128	159	$33	$8.20
Renville . . .	166	194	23	4.70

County	Value of Implements and Machinery per Acre of Improved Land	Value of Live Stock per Acre of Improved Land	Value of Products Fed to Live Stock per Acre of Improved Land	Expenditure for Labor per Acre of Improved Land
Olmsted . . .	$1.70	$6.12	$7.81	$0.73
Renville . . .	1.40	3.81	6.46	.87

Land in Olmsted County is thus valued half again as high as in Renville County. The cost of buildings, implements and machinery, and live stock per acre in Renville is about five-eighths of that in Olmsted County. The total value of buildings, implements, machinery, and live stock per farm in Olmsted County is $2050.56. In Renville it is $1645.06. The average total land value in each average-sized farm in Olmsted County is $2050.56. In Renville it is $1645.06. The average total land value in each average-sized farm in Olmsted is $5247. In Renville it is $4462. The total investment in the average-sized Olmsted farm becomes $7297.56; in Renville, $6107.06.

Deducting the cost of labor per farm from the value of each farm's yearly product, we have $906.24 as the average income on a farm in Olmsted County, and $927.94 for Renville.

A man with a capital of a little over $7000 can thus buy an average-sized, fully equipped farm in Olmsted County, and his income will be reasonably certain. He could, however, with $1000 less, buy a larger farm in Renville County, and get, perhaps, a larger yearly income. This income, however, would not be so certain; moreover, there are certain social disadvantages in living in a new country. A man with sufficient capital, wishing to invest in farm lands where the income is safe from year to year,

will prefer Olmsted farms. If, however, one is willing to hazard the risk of steadiness in income for the sake of the probability of a larger yearly return, and at the same time wishes to realize gain from increase in the price of land, preference will undoubtedly be shown for Renville farms. Men who do not own enough capital to buy an Olmsted farm may have enough for a small wheat farm. In this way the poorer farmers tend to settle in the wheat region or on the frontier. All the data presented tend, therefore, to emphasize still further the conclusions already reached.

It remains to be considered whether charges for transportation, alone or with other causes, are of importance in determining which kind of farming is the most profitable. It is true that transportation charges have some effect. Freight charges are higher on a dollar's worth of butter than on a dollar's worth of wheat. If, therefore, all other things are equal, it would pay better to raise wheat than to go into dairying. In the study made of Renville and Olmsted counties, however, transportation charges cannot be said to have had any influence in determining the kind of farming in the two localities. Renville County has had advantages in transportation that exceed those of Olmsted or Freeborn. All of these counties ship to the large cities. A direct railway line runs through Renville County to St. Paul, and has given this region cheaper transportation than has been accorded the counties further south. If the southern counties were induced to carry on intensive diversified farming because of advantages in transportation, then surely Renville County had a still better reason. The influence of lower transportation charges has been a general one, and has made possible the movement of all industries across the continent. The example of Renville County, however, as compared with the counties further south, indicates clearly that dairying has not been encouraged thereby rather than wheat-farming. It may nevertheless be noted in this connection that, if a new railroad is extended into a certain region, there will be increased demand for the land of the locality and prices of land will go up. If the price of land be raised high enough, so that more intensive farming pays better than wheat-raising, we have a result that can be attributed to changes in

transportation. Facilities for transportation have brought about such changes, however, by raising the price of land.

In conclusion, it may be emphasized that with the price of land high enough it is not dairy-farming as such that crowds out wheat-farming, but rather a more intensive that crowds out a less intensive kind of farming.

III. LAND TENURE

A. OWNERSHIP

THE LAW AND CUSTOM OF PRIMOGENITURE

By the Honourable George C. Brodrick

THE right of primogeniture, the most distinctive feature of the English family system, is partly the creation of law, and partly the growth of custom. It is the growth of custom so far as it has its origin in the voluntary action of feudal lords in making grants of land to be held by knight-service and so far as it now depends on the preference given by parents to eldest sons in wills and settlements of property. It is the creation of law so far as it is the fixed rule of succession to landed estates in case of intestacy; and so far, moreover, as the custom which prevails in wills and settlements has been determined or favoured by the law. The practice of entailing, which is often associated or confounded with the right of primogeniture, is theoretically quite independent of that right, since it would be as easy and as consistent with legal principles to entail an estate upon the youngest son as to entail it upon the eldest son. Again, the power of settling is theoretically altogether distinct from the power of entailing, since it extends to personality as well as to land and might be employed to keep land tied up though entails should be abolished by law. Practically, however, settlements are the medium through which the entailing power is exercised, and form a powerful bulwark of primogeniture, inasmuch as they enable successive heads of families, owing to it their own position, to secure its maintenance far into the lifetime of an unborn generation.

I

The so-called law of primogeniture, applicable to inheritance of land *ab intestato*, is thus stated in Blackstone's "Commentaries": "That the male issue shall be admitted before the female, and that, when there are two or more males in equal degree, the eldest only shall inherit, but the females altogether." The right of primogeniture, then, in the descent of land, exclusively belongs to eldest sons, and has no place among daughters. This fact, in itself, has a material bearing on its historical origin. The luminous researches of Sir H. Maine into ancient law tend strongly to support the opinion of Blackstone and other authorities, that we owe this institution to feudal society, not in the earlier, but in the later stage of its development. "Primogeniture did not belong to the customs which the barbarians practised on their first establishment within the Roman Empire." It was, indeed, directly at variance with the principles of equality which appear to have regulated all the primitive communities whose organisation, but lately revealed to historical students, furnishes the key to so many social problems otherwise insoluble. Even the patriarch, though lord of the family possessions, "held them as trustee for his children and kindred." The male children were recognised both in German and Hindoo jurisprudence as "co-proprietors with their father, and the endowment of the family could not be parted with, except by the consent of all its members." Still less had the eldest son any advantage over the rest, either in those primeval family groups which held their domains in joint ownership, or under that more advanced system of land tenure, where partitions took place on the death of a parent, according to rules indicated by Tacitus with his usual pregnant brevity: "Hæredes successoresque sui cuique liberi, et nullum testamentum: si liberi non sunt, proximus gradus in possessione, fratres, patrui, avunculi." Sir H. Maine, after summing up the evidence on this part of the subject, concludes that "an absolutely equal division of assets among the male children at death is the practice most usual with society at the period when family dependency is in the first stages of disintegration."

This conclusion, mainly founded on the legal history of Germany and India, is further confirmed by the great customary of Ireland, known as the Brehon Code, which not only adopts the rule of equal division but extends the right of inheritance to bastard children. It is hardly necessary to state that a like rule, but applying only to legitimate sons, was established by the Anglo-Saxon custom of gavelkind, which still prevails, as of common right, over the greater part of Kent and, in a qualified form, governs the descent of copyhold lands in some other parts of the kingdom. The Athenian law of succession, under the Solonian constitution, was the same in all essential respects with the Anglo-Saxon. All the sons inherited equally, upon the death of their father, and the only privilege reserved to the eldest was that of exercising the first choice in the division. The right of primogeniture, as Blackstone observes, seems to have been maintained by the Jews alone, among the oldest races whose laws are known to us; and even the Mosaic law assigned no more than a double portion to the eldest son, while the "birthright" of pre-Mosaic times, as appears from the case of Reuben, might be set aside by the father.

It is equally certain that primogeniture is not derived from Roman law — the real fountain head of so many institutions and ideas once supposed to be indigenous. According to Roman law "when the succession was *ab intestato*, and the group (of co-heirs) consisted of the children of the deceased, they each took an equal share of the property; nor, though males had at one time some advantages over females, is there the slightest trace of primogeniture." Intestacy, it is true, was rare among the Romans; but Sir H. Maine has given cogent reasons for believing that Roman wills, so far from being made for the purpose of accumulating property upon one representative of the family, were usually made for the contrary purpose of dividing the inheritance more equitably among all the children and defeating the rule which excluded sons already emancipated from succession *ab intestato*.

We may assume, then, with as much confidence as is possible in inquiries of this nature, that primogeniture is essentially a

feudal institution. It cannot be traced back to an age preceding feudalism; it was fully established in those countries, and those only, which are known to have adopted the feudal system, and it has been abandoned, for the most part, by those countries which have undergone a complete de-feudalising process. Moreover, though we are unable to specify the exact mode whereby this innovation was accomplished in the Dark Ages, we are able to account for it completely by the peculiar circumstances of that warlike and chaotic period. "While land," says Adam Smith, "is considered as the means only of subsistence and enjoyment, the natural law of succession divides it, like them, among all the children of the family; . . . but when land was considered as the means, not of subsistence merely, but of power and protection, it was thought better that it should descend undivided to one." Such is the true historical explanation, as it is also the sound economical explanation, of the rise of primogeniture. In ancient Rome, no less than in ancient Athens, the State was everything and the individual nothing; public rights dwarfed and overshadowed private rights; and family pride, intense as it was, could not indulge the passion of territorial aggrandisement, lest it should encounter the fierce jealousy of the republican spirit. In communities of the Oriental and old German type, different causes produced the same effect; land was regarded as "a means of subsistence" for all the members of a primitive family or village, and the idea of vassals or tenants holding under a lord could scarcely have been conceived. Even when the German tribes first conquered the Roman Empire, there is reason to believe that equality was the general principle of division. Each great chief, however, naturally received a larger share, and, being unable to cultivate the whole of it for himself, granted a part to retainers on conditions of military service. It is from grants of this kind, and from "honorary feuds" to which titles of nobility were attached, that primogeniture, as a rule of succession, is held by most jurists to have directly sprung. The original grantee of a fief, unlike the owners of "allodial" property, was indebted to no family law for his new possession. He derived it solely from the bounty of his chief, whose interest it was that it

should always be held by some person capable of serving in war, as well as of discharging the less definite obligations, in lieu of rent, which afterwards became regular legal incidents of tenure in chivalry. In most instances the eldest son would be the one most capable, on the father's death, of undertaking his feudal liabilities; but this was not the only reason why primogeniture gradually superseded joint ownership and equal division. In those wild and unsettled times, it was as necessary for the family as for the lord that it should have one acknowledged head to govern it, one standard round which all its members and dependants could rally, one judgment-seat to which all disputes could be referred. The disorganised state of society compelled a recurrence to something like the patriarchal system of family government; but whereas that system had developed into the rule of equal inheritance, feudalism, under a different order of conditions, became the parent of primogeniture.

The eldest son, therefore, was invested with his exceptional privileges under the feudal system not because he was supposed to have any exceptional rights but rather because he was supposed to be the most eligible for the performance of exceptional duties. He was not, however, invariably preferred; and we know that merit had far more to do with inheritance in the first age of feudalism than it has with succession to estates or titles in our own days. The Crown itself was then, in some degree, elective in every feudal monarchy; and it is more than probable that fiefs, like the chieftainship of Scotch and Irish clans, sometimes descended to younger brothers and sometimes to uncles. When they descended, as they usually did, to eldest sons, they assuredly brought with them far heavier burdens and far more limited rights of proprietorship than we are wont to associate with the position of a landowner. The life of a German baron under the Othos, or of a Norman baron under the Conqueror and his immediate successors, was a life of incessant toil and anxiety, seldom relieved by leisure or enjoyment; and the younger brother who had entered a monastery or turned soldier of fortune had perhaps little cause to envy the lord of several castles, whose revenues, paid in kind, were devoured by hungry and turbulent retainers.

It is impossible to fix the precise year, or even the precise reign, in which primogeniture was substituted for gavelkind in the common law of England. Blackstone, who regards this feature of mature feudalism as introduced by the Conqueror, points out that, under the so-called laws of Henry I, the eldest son had no pre-eminence beyond the right of appropriating the "capital fee" held by military tenure; and that so late as the reign of Henry II socage fees continued to be partible among the male children. At all events, the present rule of succession had become almost universal, except in Kent, before the end of the thirteenth century, by which time, also, the custom of entailing, in its most ancient form, was already established. Entails created in this form conferred no indefeasible right of inheritance. When a fee was granted to a man "and the heirs male of his body," it was held that, upon the birth of a son, the grantee might sell the land, or charge it with incumbrances, or forfeit it by treason, so as to bar the interest of his own issue, though, if he did none of these acts, it would descend according to the express terms of the grant. This full liberty of alienation is described by Mr. Neate, in his treatise on the Law of Entail, as characteristic of true feudalism, which denied the son any vested right in the estate so acquired by the father. The famous statute *De Donis* (13 Edward I, cap. 1), by which the succession of the issue and the ultimate reversion of the donor on failure of issue were secured against the risk of being defeated by alienation, is viewed by the same author as a legislative encroachment on feudal principles. The entails made under this statute for nearly two hundred years created, in fact, a perpetual series of life-estates, and are stigmatised in a well-known passage of Blackstone's "Commentaries":

> Children grew disobedient when they knew they could not be set aside; farmers were ousted of their leases made by tenants-in-tail; . . . creditors were defrauded of their debts; . . . innumerable latent entails were produced to deprive purchasers of the lands they had fairly bought; . . . and treasons were encouraged, as estates-tail were not liable to forfeiture longer than for the tenant's life.

Though it may well be doubted whether the greater part of England was subject to entails under *De Donis*, the fact of such

consequences having resulted from them has never been disputed. Accordingly, when the absurd technical device of a common recovery was invented to break these entails in the reign of Edward IV, Parliament took no steps to counteract it, and in the reign of Henry VIII expressly authorised a tenant-in-tail to bar his own issue by a proceeding known as a "fine."

It has not been sufficiently realised that during the period between the introduction of these methods for breaking entails and the institution of family settlements in the seventeenth century the ownership of family property in this country was practically more absolute, and the disposition of it less restricted, than it had been for two centuries before, or than it has since become. Each successive tenant-in-tail, by levying a fine or suffering a common recovery, was able to convert his estate into a fee-simple, and as the use of life-estates in tying up land had not yet been discovered, the head of a family was usually in this position. The agrarian history of this remarkable period yet remains to be written; but it is impossible not to connect the rapid growth and singular independence of the English gentry and yeomanry under the later Tudors and earlier Stuarts, with the limitation of entails and freedom of alienation which thus characterised it. In course of time, however, family pride, aided by lawyers, contrived new expedients for checking alienation by sale or subdivision by will, and placing the right of primogeniture on a secure basis. The first of these expedients in logical, if not in chronological, order was the mere substitution of such words as "first son" or "eldest son" for "heir of his body," in deeds of settlement. The legal effect of this was that instead of the father taking an estate-tail under the settlement, which he might have forthwith converted into a fee-simple, he took only a life-estate, and had no control over the remainder (whether for life or in tail) given by the same instrument to his eldest son. This idea was developed by conferring, so far as possible, life-estates instead of estates-tail on the whole first generation of persons included in a family settlement; so that, whereas a tenant-in-tail once in possession could not be deprived of his power to

become master of the property, the acquisition of this power might be deferred to a second, or even to a later generation. But, for reasons known to lawyers, that object could not have been accomplished effectually without a further expedient devised by Sir Orlando Bridgman and Sir Geoffrey Palmer during the Civil Wars, and generally adopted after the Restoration. This was the notable contrivance of "trustees to preserve contingent remainders," of which it is enough to say that it protected the interests of tenants-in-tail against the risk of being defeated by the wrongful act of preceding life-tenants. From this epoch, rather than from "Chudleigh's case," which is cited by Lord Bacon, must be dated the modern type of settlement. Still, the principle was maintained that an entail might be cut off by a tenant-in-tail of full age, though it was technically necessary for him, unless in possession, to obtain the concurrence of the person (generally his own father) in whom the immediate freehold was vested. This principle was violated by the legislature for the first time, as Mr. Neate shows, in the great act of William IV, which created the "protector of the settlement." Since this act it has been a positive rule of law, and no longer a mere technical necessity, that, when a tenant-in-tail under a settlement wishes to bar the entail completely, he must obtain the consent of the "protector," that is, in legal phrase, of the person who has the first estate of freehold prior to his own estate-tail.

II

We are now in a position to review the actual operation of primogeniture in this country, whether under the express terms of settlements and wills, or by virtue of the law prescribing the course of descent on intestacy. Unfortunately, the statistical materials requisite for such a review are still very imperfect. No register of settlements, or of other dealings affecting land, exists as yet for the greater part of England, though such a register is kept in Scotland, and very conflicting estimates have been formed of the proportion which settled bears to unsettled property. Wills, it is true, are preserved, but they do not show

the extent of land devised by them; nor is there any means of ascertaining, with any approach to accuracy, how far they are employed to aggravate, and how far to mitigate, the inequality arising from the custom of settling landed estates upon eldest sons. It might have been expected, however, that a complete record of the land devolving annually by descent would be kept for State purposes and public information. Instead of this, no distinction appears to be drawn, even between land which passes by will and land which passes by settlement, being equally chargeable with succession duty; while, for a like reason, no separate account is published of land transmitted to heirs by the law of intestacy. A still more extraordinary, not to say disgraceful, cause of the mystery which has so long surrounded our land-system is the circumstance that, until the present year (1876), there were no official documents showing the number of landowners in Great Britain, and the distribution of the soil among them. With the new Domesday Book in our hands, we can ascertain how the soil is actually distributed in every county of England and Wales, but how far the law and custom of primogeniture may have contributed to produce this distribution remains even now a speculative question. Still there are certain facts which are matters of common notoriety and others which are within the general cognizance of persons conversant with land, by the light of which it is possible to arrive at some trustworthy conclusions respecting the dominion of primogeniture over social life in England.

In the first place, it is material to observe that personal property, which is exempt from the law of primogeniture, is little affected by the custom, save where it is thought necessary to keep up the dignity of a family place. Rich capitalists who do not invest in land, or aspire to found a county family, seldom make an eldest son, and of those who do indulge this ambition, some prefer to buy a moderate estate for each of their sons. Still more habitually is equal division recognised as the dictate of natural equity by the great body of merchants, tradespeople, and professional men, as well as by the labouring classes throughout Great Britain and Ireland; in short, by the

middle and lower orders of society, "divorced from the soil" in this country, and by the landless members of the upper orders. Nor must it be forgotten that, by English law, ordinary leaseholds, whether they consist of lands or houses, count as personalty and are distributed as such on intestacy; whereas money in trust for investment in land counts as realty and falls under the same rule of inheritance. Vast leasehold interests are constantly included in settlements of personalty, and few of these settlements, whether made on the marriage of a duke's younger son or on the marriage of a shopkeeper, exhibit any bias towards primogeniture. In most instances, the funds are directed to be invested for the benefit of all the sons and daughters of the marriage equally, though a power is usually reserved to the parents of modifying this distribution by "appointment," at their own discretion. The same course is generally followed by testators possessed of small landed estates purchased with their own earnings, who, for the most part, devise their land to trustees for sale, and direct the proceeds to be divided among their children. In families of the yeoman class, the ordinary practice appears to be that hereditary property should go to the eldest son, but that, in accordance with the Scotch rule of *legitim*, younger children should be compensated, so far as possible, for their disinherison and that, if burdened with mortgages, the land should be sold for the equal benefit of all. Even the rude wills and settlements drawn up by priests or schoolmasters for Irish peasant farmers, among whom the instincts of proprietorship are cherished in their intensest form, embody the principle of gavelkind and not of primogeniture. Though often destitute of any legal validity, and purporting to dispose of an interest which has no existence in law, they usually disclose a clear intention to place the younger children on a tolerably equal footing with the eldest son, either by the subdivisions of which Irish landlords complain so much, or by heavy charges on the tenant-right.

It may, therefore, be safely affirmed that primogeniture, as it prevails in England, has not its root in popular sentiment, or in the sentiment of any large class, except the landed aristocracy

and those who are struggling to enter its ranks. By the great majority of this class, embracing the whole nobility, the squires of England, the lairds of Scotland, and the Irish gentry of every degree, primogeniture is accepted almost as a fundamental law of nature, to which the practice of entails only gives a convenient and effectual expression. Adam Smith remarks that "in Scotland more than one-fifth, perhaps more than one-third, part of the whole lands of the country, are at present supposed to be under strict entail" — that is, entailed under a system introduced in 1685, which barred alienation far more inexorably than was permitted by the English rule against perpetuities. Mr. McCulloch, writing in 1849, calculated that at least half Scotland was then entailed, though an act passed in the previous year had already facilitated disentailing by provisions borrowed from the English law. In England, where so much land is in the hands of corporations or trustees for public objects, and where almost all deeds relating to land are in private custody, we cannot venture to speak with so much confidence on this point. Considering, however, that in most counties large estates predominate over small, and that large estates, by the general testimony of the legal profession, are almost always entailed either by will or settlement, while small estates, if hereditary, are very often entailed, there is no rashness in concluding, in accordance with the evidence given before Mr. Pusey's committee, that a much larger area is under settlement than at the free disposal of individual landowners.

It has frequently been asserted that a mere fraction of the land which yearly changes hands on death is governed by the law of intestacy. There are no adequate means of testing this assertion, but the probability is that it overstates the case. There is scarcely a wealthy or noble family of any considerable antiquity in which the estates have not at some time descended to an heir or coparceners by the effect of this law, and such an event is far more likely to happen in families less guided by the advice of solicitors. What is really true is that landowners seldom deliberately intend to die intestate and that most descents by operation of law are the result of negligence

or misadventure. A man, perhaps, makes several contradictory wills, all of which prove to be void for want of proper attestation or by reason of his incompetence; or he makes a good will that does not cover the whole of his property; or, having recently purchased a small freehold, he is just about to devise it, when he is suddenly cut off. The known wishes of an intestate may be carried into effect by arrangement within the family or an amicable suit in equity, without the public becoming aware of the fact, especially if those wishes should coincide with the course of descent at common law. Several notable examples of the contrary kind, where the known wishes of the intestate and the plain requirements of justice were grievously violated by the law of primogeniture, have been cited by Mr. Locke King and others. Upon the whole, however, our presumption must be that, whatever may be the indirect influence of that law on the minds of settlors and testators, its direct influence in promoting the aggregation of land is by no means extensive.

We have next to examine the mode whereby the right of primogeniture is secured in ordinary settlements of landed property, or, less frequently, in the wills of landed proprietors who have enjoyed an absolute power of disposition. This mode is thus explained in the standard work of Mr. Joshua Williams, on the Law of Real Property:

> In families where the estates are kept up from one generation to another, settlements are made every few years for this purpose; thus, in the event of a marriage, a life-estate merely is given to the husband; the wife has an allowance for pin-money during the marriage, and a rent-charge or annuity by way of jointure for her life, in case she should survive her husband. Subject to this jointure, and to the payment of such sums as may be agreed on for the portions of the daughters and younger sons of the marriage, *the eldest son who may be born of the marriage is made by the settlement tenant-in-tail.* In case of his decease without issue, it is provided that the second son, and then the third, should in like manner be tenant-in-tail; and so on to the others; and in default of sons, the estate is usually given to the daughters; not successively, however, but as "tenants in common in tail," with "cross remainders" in tail. By this means the estate is tied up till some tenant-in-tail attains the age of twenty-one years; when he is able, with the consent of his father, who is tenant for life, to bar the entail with all the remainders. Dominion is thus again acquired over the property, which dominion is usually exercised in a

re-settlement on the next generation; and thus the property is preserved in the family. Primogeniture, therefore, as it obtains among the landed gentry of England, is a *custom* only, and not a *right*; though there can be no doubt that the custom has originated in the right which was enjoyed by the eldest son, as heir to his father, in those days when estates-tail could not be barred.

To complete this explanation, it should be added that almost all modern settlements contain a power of sale, enabling the trustees, with the consent of the tenant in possession, to sell portions or even the whole of the property, and to re-invest the purchase-money in other land. Under these powers outlying estates, or estates which may have come into the family collaterally, are very commonly sold off, and the produce is either applied in rounding off the central domain, or held upon trust for the same persons as would have received the income of the land, till it is sooner or later absorbed in paying charges which must otherwise have been raised upon the entire property. In default of such powers being inserted in the settlement, the Court of Chancery may direct sales, with the consent of the parties interested; and it may be asserted that with the exception of a very few domains inalienably settled, like Blenheim, on a particular family, no estate in England is literally unsaleable. It should also be remarked that a settlement of the kind described by Mr. Joshua Williams implies that full control has been acquired over the land before it is executed. For this purpose, most family properties are disentailed in each generation with a view to re-settlement, by the joint act of the life-owner for the time being as "protector," and of his eldest son as tenant-in-tail in reversion. The former is actuated by a desire to perpetuate the entail by fresh limitations, to a period as distant as the law permits, and often gains, in the process of re-settlement, the means of discharging his own debts or making provision for those who have claims upon him. The son, on the other hand, taking a life-estate in lieu of his estate-tail, forfeits the prospect of becoming master of the property on his father's death; but in consideration of this sacrifice, he usually receives an immediate rent-charge by way of allowance, and is placed in a position to marry early.

It is well known that in families which maintain the practice of entailing, the disparity of wealth between the eldest son and younger children is, almost invariably, prodigious. The charge for the portions of younger children, when created by a marriage settlement, is created at a time when it is quite uncertain how many such children there will be. It is rarely double of the annual rental, and often does not exceed the annual rental; indeed, in the case of very large estates, it may fall very far short of it. In other words, supposing there to be six children, the income of each younger brother or sister from a family property of £5000 a year will consist of the interest on a sum of £1000 or possibly £2000; and even if there were but one such younger child, his income from the property would probably not be more than one-twentieth or one-thirtieth of his elder brother's rental. Nor does this represent the whole difference between their respective shares of the family endowment; for the eldest son, who pays no probate duty, finds a residence and garden at his disposal, which he may either occupy rent-free or let for his own private advantage. Of course, where a father possesses a large amount of personalty, he may partially redress the balance; and there are exceptionally conscientious landowners who feel it a duty to save out of their own life incomes for younger children. But it is to be feared that accumulations in the funds are too often employed not exclusively nor mainly to increase the pittances allotted for portions, but, on the principle of "to him that hath shall be given," to relieve the land of some outstanding incumbrance and to aid the eldest son in conforming to a conventional standard of dignity. The same imaginary obligation to preserve that degree of state and luxury which is expected of country gentlemen with a certain status and acreage, offers an obstacle to saving, which the majority find insuperable. Besides, nine out of ten men who inherit their estates burdened with charges for their father's widow and younger children would think it Quixotic to lay by out of their available income, as men of business would do, for the benefit of their own younger children. Hence the proverbial slenderness of a

younger son's fortune in families which have a "place," and especially in those which have a title, to be kept up. As for the daughters, their rank is apt to be reckoned as a substantive part of their fortunes, and not only are their marriage portions infinitely smaller than would be considered proper in families of equal affluence in the mercantile class, but it is not unfrequently provided that, unless they have children, their property shall ultimately revert to their eldest brother.

To say that primogeniture, thus organised, has a direct tendency to prevent the dispersion of land, is only to say that it fulfils the purpose for which it was instituted. It is hardly less evident that it must have the further effect of promoting the aggregation of land in a small and constantly decreasing number of hands. The periodical renewal of entails is intended to secure, and does secure, ancestral properties against the risk of being broken up; and, practically, they very seldom come into the market, except as a consequence of scandalous waste or gambling on the part of successive life-owners. The typical English family estate is that which, like Sir Roger de Coverley's, neither waxes nor wanes in the course of generations, and there are still many such estates in counties remote from London. But there is nothing to check the cumulative augmentation of ancestral properties by new purchases of land, which is the darling passion of so many proprietors. There is always some *angulus iste* to be annexed and brought within the park palings or the ring-fence on the first good opportunity; and scarcely a day passes without some yeoman of ancient lineage being erased from the roll of landowners by the competition of his more powerful neighbour. Not that any tyranny or unfair dealing is involved in this process of aggrandisement, which is the consequence of economical laws quite as simple as that of natural selection in the animal creation. The yeoman sells his patrimony either because he has ruined himself by drinking or improvidence, or because he finds that by turning it into money he can largely improve his income and the future expectations of his family. The nobleman or squire buys it at a price which is not commercially remunerative, either to

prevent its being covered with buildings, or because it lies conveniently for his own agricultural designs, or because he wants to extend his influence in the county; for one or all of which reasons it is worth more to him than to any one else. It is known in some parts of the country that it is utterly vain to bid against the great territorial lord of the district, whose agent is instructed to buy up all properties for sale, regardless of expense. In other parts of the country, men who have made their fortunes in trade are equally covetous of land, which for them is the one sure passport to social consideration, and equally anxious to keep it together by entails. Thus by the normal operation of supply and demand large estates are perpetually swallowing up small estates, while, by a suspension of that operation through the law and custom of primogeniture, they are themselves preserved, to a great extent, from dissolution. On the other hand, it must not be forgotten that a counter-tendency, no less natural and legitimate, partly neutralises this gravitation of smaller towards larger aggregates of land. The enormous rise in the value of all sites within easy reach of great towns sometimes offers to great landowners an inducement to sell which they cannot resist. In this way, under the powers of sale already mentioned, distant and detached portions of great estates are frequently passing in large blocks into the hands of new landlords, generally of the mercantile class, or are bought up by land-jobbers and sold, in petty blocks, to retired tradesmen. At the same time, the acquisition of minute plots by the working classes has been facilitated of late by the agency of freehold-land societies, originally established for political objects, and would doubtless prevail to a much greater extent but for the exorbitance of law-charges on small purchases of land.

In default of authoritative statistics, the loosest and vaguest conjectures were long current respecting the division of ownership caused by these divergent tendencies. It was confidently stated, for instance, that, whereas in the latter part of the last century this country was divided among 200,000 landowners, it had come to be divided among no more than 30,000. No

proof was thought necessary to support the former assertion; the latter was supported by a proof which, on examination, turned out to be perfectly worthless. In the occupation returns of the census for 1861, only 30,766 persons described themselves as land-proprietors, and these figures were most persistently quoted as official evidence on the subject, in the face of the patent fact that above half of the whole number were females. The probable explanation of this circumstance is, that women owning land feel a pride in recording their ownership; whereas thousands of male landowners returned themselves as peers, members of Parliament, bankers, merchants, or private gentlemen. At all events, the mere existence of so palpable a flaw in the return utterly destroyed its value for the purposes of statistical argument. Equally reckless assertions were made in support of the contrary opinion, and until the present year it was regarded as open to doubt whether the whole body of English landowners, properly so called, amounted to 30,000 or to 300,000.

These doubts are at last set at rest. It is true, the return lately issued by the Local Government Board purports to be no more than "proximately accurate," and a very cursory inspection suffices to disclose numerous errors of detail which might have been avoided by more careful revision. Great and inevitable difficulties were found to beset the definition of ownership, and one of these difficulties had to be solved by treating as owners all holders of leases for more than ninety-nine years or for lives, with a right of renewal, while other leaseholders were excluded. Moreover, the return does not cover the metropolis; and since it is based on lists separately prepared for each county and each rating-district, it must be taken as subject to large deduction for double entries. Nevertheless, its general results, translated into round numbers, may be accepted as conclusive for the purpose of our present inquiry. They exhibit a gross total of 972,836 freehold properties, which probably represents a net total of above 900,000 freeholders in England and Wales. But of these so-called properties, no less than 703,289 are plots of less than one acre,

while 269,547 consist of one acre and upwards. Considering how large a proportion of gardens and grounds forming part of business premises exceed one acre in extent, it would certainly have been convenient if some higher limit, not less than five acres, had been fixed as the minimum area of a *bona fide* landed property. However, the voluminous tables here set forth contain ample materials for a more complete analysis than is furnished in the official summary, and some of their more important revelations have already been made public.[1] It appears that although nearly a million persons may own the sites of their own homesteads, 42,524 is the extreme number of properties above 100 acres each, the number of their owners being considerably less; that nearly one-eighth of all the enclosed land in England and Wales is in the hands of 100 owners; that nearly one-sixth is in the hands of less than 280 owners; and that above one-fourth is in the hands of 710 owners. Nor is this all; for it must not be forgotten that among the dukes and other great noblemen who head this territorial roll there are several who also derive a vast rental from Scotland, Ireland, or the metropolis, whereas among the nominal proprietors below one acre there is an indefinite number of mere faggot-voters.

A close investigation of the returns for single counties fully bears out these conclusions, and places the inequalities of landed proprietorship in a still more striking light. Take, for instance, Northumberland and Nottinghamshire, which stand next to each other in alphabetical order, but differ widely from each other in the character of their population. In Northumberland, the number of owners below one acre is stated at 10,036, but they own no more than 1424 acres between them,

[1] See the elaborate statistics published in the *Spectator* of February 12, February 19, and March 4, 1876. These statistics, having been tested by an independent examination of the figures, seem to be substantially correct. A further analysis published in the *Times* of April 7, 1876, shows three proprietors owning above 100,000 acres, two between 80,000 and 100,000, two between 70,000 and 80,000, three between 60,000 and 70,000, nine between 50,000 and 60,000, eight between 40,000 and 50,000, twenty-eight between 30,000 and 40,000, and forty-five between 20,000 and 30,000. It also states that "874 owners hold 9,367,133 acres, 2689 owners hold 14,896,324 acres, 10,207 owners hold 22,013,208 acres, 42,524 owners hold 28,840,550 acres."

so that each possesses, on an average, less than one-seventh of an acre. In Nottinghamshire, 9891 petty landowners rule over 1266 acres between them, possessing, on an average, about one-eighth of an acre apiece. If we now look at the higher end of the scale, the contrast is startling. Nearly three-fifths of Northumberland is in the hands of forty-four proprietors, nearly half is in the hands of twenty-six proprietors, and far more than one-seventh is in the hands of one proprietor, the Duke of Northumberland, who has also landed estates in other counties. In Nottinghamshire, again, nearly two-fifths of the whole acreage belongs to fourteen proprietors, and above one-fourth to five proprietors. If the division of landed property over the rest of England and Wales corresponded with the division of landed property in Northumberland and Nottinghamshire, one-half of the whole country would be in the hands of about 1000 proprietors, and these proprietors, by virtue of their family connections and social ascendency, would exercise a power far more than commensurate with their acreage.

The inference must be that primogeniture, operating for many generations, has reduced the landed aristocracy of England and Wales to a body even smaller than had been commonly supposed, but that in those classes which do not maintain the custom of primogeniture landed property is broken up into a multitude of small parcels. The owners of such parcels are, for the most part, not yeomen, but shop-keepers and artisans, too humble and too dependent for their livelihood on urban trade and industry to fill any perceptible space in the rural economy of this country. That economy is so familiar to all of us that we scarcely recognise the peculiar characteristics of it, which foreigners notice as unique in modern Europe. To an Englishman born and bred in the country, it appears the natural order of things, if not the fixed ordinance of Providence, that in each parish there should be a dominant resident landowner, called a squire, unless he should chance to be a peer, invested with an authority over its inhabitants, which, as Mr. Neate contends, "the Norman lords, in the fulness of their power," never had the right of exercising. This potenate, who, luckily

for his dependants, is usually a kind-hearted and tolerably educated gentleman, concentrates in himself a variety of rights and prerogatives, which, in the aggregate, amount to little short of patriarchal sovereignty. The clergyman, who is by far the greatest man in the parish next to himself, is usually his nominee and often his kinsman. The farmers, who are almost the only employers of labour besides himself, are his tenants-at-will, and, possibly, his debtors. The petty tradespeople of the village community rent under him, and, if they did not, might be crushed by his displeasure at any moment. The labourers, of course, live in his cottages, unless, before the Union Chargeability Act, he should have managed to keep them on his neighbour's estate; but this is by no means his only hold upon them. They are absolutely at his mercy for the privilege of hiring allotments at an "accommodation" rent; they sometimes work on the home farm, and are glad to get jobs from his bailiff, especially in the winter; they look to him for advice in worldly matters as they would consult the parson in spiritual matters; they believe that his good word could procure them any favour or advancement for their children on which they may set their hearts, and they know that his frown may bring ruin upon them and theirs. Nothing passes in the parish without being reported to him. If a girl should go wrong, or a young man should consort with poachers, or a stranger of doubtful repute should be admitted as a lodger, the squire is sure to hear of it, and his decree, so far as his labourers and cottage tenants are concerned, is as good as law. He is, in fact, the local representative of the law itself, and, as a magistrate, has often the means of legally enforcing the policy which, as landlord, he may have adopted. Add to all this the influence which he may and ought to acquire as the leading supporter and manager of the parish school, as the most liberal subscriber to parochial charities, as the patron of village games and the dispenser of village treats, not to speak of the motherly services which may be rendered by his wife, or the boyish fellowship which may grow up between the youth of the village and the young gentlemen at the Hall, and it is difficult to imagine a position of

greater real power and responsibility. Yet even this does not exhaust the special advantages and prerogatives attached to the position of an English country gentleman. Until very lately, he alone was lawfully eligible to a seat in Parliament, and even now his class, which may be said to engross the Upper House, predominates conspicuously in the Lower. By this class the whole machinery of county taxation, county government, and county judicature is regulated and worked. In those of them who may be magistrates is vested *ex officio* a right of taking part in poor-law administration; in their gift is a great variety of lucrative county offices, and the wealthiest magnate of the greatest manufacturing town is "nobody in the county" until he shall have secured their good opinion. That powers so vast and so arbitrary have not been more frequently abused is an honour to our national character; nor can we reflect without some feeling of pride on the admirable manner in which the "duties of property" are acknowledged and discharged on thousands of English estates. But this must not lead us to idealise this form of rural economy as our forefathers idealised the British Constitution, to ignore the grave defects and anomalies inherent in it, or lightly to dismiss the experience of other nations as inapplicable to our social condition.

III

The reports on land tenure drawn up for the Foreign Office in the years 1869–1870, by Her Majesty's representatives in the principal countries of Europe and the United States of America, contain a mine of precious materials on foreign land systems. Though specially directed to points bearing directly on the objects of the Irish Land Bill, they include a large mass of evidence on such questions as the descent of landed property on intestacy, and the general tendency of various codes to favour the accumulation or dispersion of land. A few extracts from the results thus obtained may be of some value in illustrating an inquiry into the law and custom of primogeniture in England.

In France, as all economists are aware, "the land is chiefly occupied by small proprietors, who form the great majority

throughout the country," so that of some 7,500,000 proprietors, about 5,000,000 are estimated to average six acres each, while only 50,000 average 600 acres. This *morcellement* is the direct and foreseen consequence of the partible succession enforced by the Code Napoléon, under which all children inherit the bulk of their father's property equally, without distinction of age or sex, a testator with one child being allowed to dispose of half, a testator with two children of one-third only, and a testator with three children of one-quarter. The dismemberment of estates thus produced is progressive. "With some rare exceptions, all the great properties have been gradually broken up, and even the first and second classes" (averaging 600 and 60 acres respectively) "are fast merging into the third." Volumes of controversy have not exhausted the arguments either for or against the French law of inheritance, and it is instructive to remark that, whereas it used to be attacked on the ground that it stimulated the increase of population to a frightful extent, it is now attacked on the ground that it keeps the population almost stationary. In France itself, if we may trust the report, "the prevalent public opinion as to the advantages or disadvantages of the tenure of land by small proprietors is decidedly that it has been advantageous to the production of the soil, and has tended to the improvement of the material condition of the agricultural population." It is believed, moreover, that subdivision "conduces to political as well as social order, because the greater the number of the proprietors, the greater is the guarantee for the respect of property, and the less likely are the masses to nourish revolutionary and subversive designs." The reporter, Mr. Sackville West, appears to share these views, but he is careful to express his concurrence in M. Lavergne's opinion that *morcellement* has now reached the limit of safety, and that "an unlimited partition of the small properties as they already exist would be productive of serious evil."

The elaborate report on land tenure in Prussia and the North German Confederation, by Mr. Harriss Gastrell, attests the same preponderance of public opinion in favour of small

proprietorship, which is encouraged by the law. "In cases of intestacy the law divides all property, including land, in certain proportions, among widow and children; or equally amongst the children, if there be no widow," and no disposition can deprive the "natural heirs" of their claim to a fixed allotment, sometimes amounting to as much as two-thirds of the whole. Though subject to these limitations, "the custom of making a will is almost universal," but "the restrictions on land by settlements and the like are much less than in England." The consequence is that in the entire province of Prussia, out of about 185,000 freehold estates, rather more than half do not exceed twenty acres in extent.

"Wurtemburg is remarkable as the country where subdivision of land is carried to the greatest extreme," containing, as it does, some 280,000 peasant owners, with less than five acres each, and about 160,000 proprietors of estates above five acres. Upon intestacy, the land is equally divided among all the children, male and female. The father, however, seems to be allowed full liberty of disposition over the property, so long as a certain moderate portion defined by law (*pflicht-theil*) is reserved for each child. On the smaller peasant farms, "when, in accordance with the will of the father, one child becomes owner of all the paternal land, an estimate is formed on a footing rather favourable to him, and he compensates the brothers and sisters by equal sums of money. The daughters, however, are more frequently on their marriage allotted an equal share of land; and, as the husband is probably the proprietor of a piece of land elsewhere in the commune, the intersection and subdivision of the land goes on increasing." On the larger peasant farms, the custom of primogeniture has encroached still further on that of equal division. Here, the eldest son commonly succeeds to the whole property, "often in the father's lifetime. When the parent is incapacitated by age from managing his farm, he retires to a small cottage, generally on the property, and receives from the son in possession contributions towards his support both in money and kind. The other children receive a sum of money calculated according to the size of the property

and the number of children, but which, in any case, falls far short of the sum which they would receive if the property were equally divided, or even were the law of *pflicht-theil* acted on. They have, however, their home there until they establish themselves independently or take service on another property." Mr. Phipps, who gives this account of the Wurtemburg land system, adds that political economists of that country are now "of opinion that small proprietors who complete their means of livelihood by industrial pursuits are the most desirable class to encourage, whereas formerly agriculture on a large scale was considered the most profitable."

In Bavaria, where the land is very much subdivided, Mr. Fenton attests the general prevalence of a custom very similar to that which characterises the larger peasant farms in Wurtemburg. Except in the Bavarian Palatinate, where the Code Napoléon is in force, the descent and inheritance of land are governed throughout Bavaria by the principles, though not everywhere by the express provisions, of the common law. "A proprietor is bound to bequeath, at his death, a certain defined portion of his property, to be divided in equal shares among all his legitimate children. That portion must not be less than one-half, if the number of children be five or more than five; and not less than one-third, if there be four, or less than four, children." Where the property consists of land, and especially if it be a peasant property, the eldest son may, and usually does, retain the whole, paying the rest a pecuniary indemnity for their shares, if the father has not already installed him in possession, as sometimes happens, during his own lifetime. "Amongst that class the almost invariable custom is for the testator to leave the whole of the real property — farmhouse, farm buildings, and land — in the possession of one member of the family, commonly the widow or the eldest son, and that person then becomes responsible to the children for the payment to them of a sum of money corresponding to the value (as ascertained by official appraisement) of their share of the property, the children's share being generally fixed at one-half of the whole, real as well as personal. It is further a universally understood

condition of an arrangement of the nature above described, that the person who remains in possession of the property and becomes its owner, is bound during a certain number of years (after the payment of their shares to all the children) to provide any one or all of them with board and lodging at the homestead, in the event of their falling into distress from sickness, want of employment, etc." In short, the peasant proprietors of Bavaria, who are admitted to be a thriving class, appear to keep up their family estates with as much tenacity as our own landed gentry, but with a jealousy for the rights of younger children which reminds us of the Irish peasant farmers. In the Austrian Empire, on the contrary, the devolution of all property, real and personal, is regulated by the Civil Code, by which "no preference is accorded to eldest sons," nor have sons any advantage over daughters; but "an exception exists in the case of family entails (*majorats*)." Of course these entails are mainly created on large properties. Whatever be the instrument which constitutes such an entail, Mr. Lytton remarks that it has no legal validity without the special consent of the legislative power.

It is almost superfluous to state that Switzerland is a land of small proprietors, the law of equal division being heartily supported by custom. According to Mr. Mackenzie's report "the quantity of land usually held by each varies from six to twelve acres, small lots held together, and the larger intersected by other properties," yet, instead of being pauperised by subdivision, the Swiss are proverbial for successful enterprise in trade both at home and abroad. In Belgium *morcellement* has notoriously been carried, under the Code Napoléon, to a greater extreme than in France itself; so that Mr. Wyndham estimates the average size of estates, deducting woodlands and wastes, at seven acres; and Mr. Grattan cites official statistics which show that four-fifths did not exceed twelve acres. "The dispersion of land is increased by the system which generally prevails at public sales of dividing real estate into small parcels or lots"; otherwise the properties of small families, sold for the purpose of effecting a more convenient distribution among children, would be constantly passing into the hands of rich

families. In Holland, as we learn from Mr. Locock's report, "the law of succession requires the division in equal portions, amongst the children or next of kin, of a major part of every inheritance without regard to its nature or origin, and this is naturally calculated to favour to a great extent the division of landed property. But on the other hand there exists a very prevalent desire with individuals to avoid unnecessarily splitting up the paternal estates. It is a common thing for a farmer, whether proprietor or tenant, to have accumulated before his death sufficient movable property, frequently in the funds, to enable him to assign a portion therefrom to one or another of his children." The policy of the law, however, is rather against family arrangements whereby the eldest son may retain all the land and the younger children may be compensated in money, since it imposes an increased tax on successions thus modified by agreement. In the Hanse Towns, as well as in Schleswig-Holstein, primogeniture is more countenanced by law; but even where, as in Bremen, the real estate goes to the eldest son on intestacy, the "co-heirs," or younger children, are entitled to be portioned out of it.

In Italy, says Mr. Bonham, "the laws in force tend in every way to favour the dispersion of land," and equal division, without distinction of sex, is the rule of inheritance on intestacy; but a landowner, having children, may leave one-half of his property by will; the other half — *legitima portio* — "cannot be burdened with any conditions by the testator." In Greece and Portugal the law of intestacy and the restrictions on testamentary disposition are, in all essential respects, the same as in Italy, producing in both countries a large and increasing subdivision of landed property. Mr. Finlay, speaking of the stationary condition of Greek agriculture, observes: "It is the almost universal rule that each small proprietor possesses a *zevgari*" (or plot requiring two pair of oxen to plough it), "and that each cultivator of national land occupies no more." Mr. Merlin, in his report on Greece, mentions the curious fact that "it is extremely rare for the sons to marry till their sisters are provided for; and this feeling pervades all classes." In Russia,

where the land system has been complicated by political and social distinctions between classes, by serfdom, and by the communal organisation, Mr. Michell reports that local usage regulates the descent of peasant properties. The law of intestacy for the rest of the community is based on equal division, giving males a preference over females. "There is no general law of primogeniture, although in a few great families estates have been entailed under a special law passed in the reign of the Emperor Nicholas. In 1713 Peter the Great attempted to introduce a general inheritance in fee of the eldest son; but this was so much opposed to the spirit of the Russian landowners, that one of the first acts of Peter II was to cancel the ukase of 1713."

Under the land laws of most states in the American Union, an owner in fee-simple has nearly the same power of disposition as he would possess in this country, but the rule of equal division prevails in case of intestacy. The results of this system and the reason why they differ so widely from those produced by our own are succinctly described in the following passages of Mr. Ford's report:

The system of land occupation in the United States of America may be generally described as by small proprietors. The proprietary class throughout the country is, moreover, rapidly on the increase, whilst that of the tenancy is diminishing, and is principally supplied by immigration. The theory and practice of the country is for every man to own land as soon as possible. The term of landlord is an obnoxious one. The American people are very averse to being tenants, and are more anxious to be masters of the soil, and are content to own, if nothing else, a small homestead, a mechanic's home, a comfortable dwelling-house in compact towns, with a lot of land of from 50 feet by 100 feet about it. In the sparsely peopled portions of the country a tenancy for a term of years may be said to exist only in exceptional cases. Land is so cheap there that every provident man may own land in fee. The possession of land of itself does not bestow on a man, as it does in Europe, a title to consideration; indeed, its possession in large quantities frequently reacts prejudicially to his interests, as attaching to him a taint of aristocracy which is distasteful to the masses of the American people.

The landowner in the United States has entire freedom to devise his property at will. He can leave it to one or more of his children or he may leave it to a perfect stranger. In the event of his dying intestate, his real estate is equally divided amongst his children without distinction as to sex,

subject, however, to a right of dower to his widow, should there be one. If there are no children or lineal descendants, the property goes to other relatives of the deceased. If the intestate leaves no kindred, his estate escheats to the state in which it is situated. The laws of the different states of the Union regulating the descent and division of landed property on death of owner harmonise to a great extent with each other.

It may be asserted that the system of land-tenure by small proprietors is regarded in this country with great favour, and that the prevailing public opinion is that the possession of land should be within the reach of the most modest means. A proprietor of land, however small, acquires a stake in the country, and assumes responsibilities which guarantee his discharging faithfully his duties as a citizen. Whilst practically any one man may acquire as much land as he can pay for, yet the whole tendency and effect of the laws of this country are conducive to dispersion and multitudinous ownership of land. The several states, and the government of the United States grant their lands in limited quantities; and under the laws of descent lands descend to the children, irrespective of sex, in equal shares; and the laws of partition provide for a division of the lands into as many parts as there are interests, where it can be done without prejudice. In many European countries the sale and transfer of land are so hampered by legal complications, and entail such heavy expenses, as frequently to discourage such operations. In the United States, on the contrary, the sale and transfer of land are conducted with about the same ease as would be the sale of a watch. Very large quantities of land are seldom held in this country, undivided, by one family for more than one or two generations. It is worthy of remark that in this country the same reluctance is not felt, as in Europe, to parting with family lands.

The conclusion to be drawn from this rapid survey of foreign laws and customs regulating the devolution and settlement of land may be expressed in a very few words. No other nation has adopted in its entirety the English right of primogeniture — a right which could only have grown up in a thoroughly feudalised society, and could only have been perpetuated in a country where the feudal structure of society has never undergone any violent disturbance. In those states which have remodelled their jurisprudence on the principles of the Code Napoléon, the eldest son is effectually debarred from engrossing the whole landed property of the family. In other states which have developed their law of succession independently, parents are allowed to "make eldest sons," under greater or less restrictions. In no considerable state but our own does the law itself, in default of a will or settlement, constitute the eldest son the sole heir to

all the realty, and in no other is the exclusive preference of the first-born, thus consecrated by law, carried to such extreme lengths in family government. It remains to consider whether this unique institution, viewed as a whole, deserves to be still upheld by English statesmen, either by virtue of its intrinsic merits, or by reason of its having become incorporated into our national character; and, if not, in what manner it may be proper to modify it by legislative enactment.

IV

In approaching this part of the subject we must resolutely put aside two lines of reasoning which have done much to obscure it. The first of these is that which starts from the idea that younger sons have certain natural rights, of which they are deprived by the law and custom of primogeniture. Now, it is impossible to form any definite conception of rights in this sense, except as arising from the personal exertions of those who claim them; or, at least, from expectations fostered by the law, or the parent, as the case may be. If the Code Napoléon had been introduced into England, and if the existing rule of descent by primogeniture were afterwards substituted for it, the generation of younger sons affected by the change would have good cause for complaint, unless their interests were expressly reserved. Again, if a father had led his children to count upon an equal division of his property, and were then to accumulate all upon the eldest son, a palpable wrong would be done to all the rest. But the supposed grievance of existing younger sons who receive the small fortunes to which they were born and have always looked forward will not bear a moment's investigation. It is in no respect more real than the grievance of those who are born to no fortune at all and look wistfully at the inherited wealth of the richer classes. Indeed, the cadets of territorial families who are disposed to regard themselves as the victims of injustice may well reflect that, but for the institution of primogeniture, those families might perhaps have little or no territory in their possession, but might long

since have been merged in the mass of the community. Except where the law steps in, on intestacy, to defeat the known intentions of a father, or a father disappoints the hopes encouraged by himself to aggrandise an eldest son, it can hardly be said that primogeniture involves *injustice* to younger children. Whatever injustice it may involve is sustained by society at large, and though society consists of individual members, those of its members who ultimately suffer most by the operation of primogeniture are certainly not to be found in families which owe their existence to it.

Still more irrelevant are the attacks which have recently been made on primogeniture from a communistic point of view. Communistic theories of property, if valid at all, are valid not against any particular rule of succession, but against individual proprietorship as such or against the ample and peculiar rights of English landlords — rights of which no proprietary class is more tenacious than new purchasers. No doubt it is a perfectly intelligible proposition that all the land in the kingdom ought to be "nationalised" and placed under public management, because individual owners cannot be trusted with full dominion over that part of the earth's surface by which and upon which all natives of England must live unless they choose to emigrate. It is evident that, apart from all other objections, this doctrine is the very negation of the belief in peasant-proprietorship and "the magic of property," being, in fact, an essentially urban sentiment and inevitably destructive to all independence of rural life. Nor can it be said that our experience of corporate administration, in the case of lands held by collegiate, ecclesiastical, and municipal bodies, as well as by trustees of charities, is such as to recommend the substitution of public for private ownership on a much grander scale. At the same time it is incontestable that land has actually been treated by all governments, not excluding our own, as more within State control, for many purposes, than other kinds of property; and it is possible to conceive circumstances under which it might be expedient to extend State control much further over the soil of these islands. But what has all this to do with the right of primogeniture,

and what consistency is there in a programme which couples the abolition of that right and the adoption of free trade in land with provisions designed to withdraw from the market and consolidate into large municipal domains more and more of the properties which are already supposed to be too few? This is not the place to discuss the moral or economical aspects of these provisions; suffice it to point out that, except so far as they are aimed at overgrown private estates, they have nothing in common with the policy of reforming the law and custom of primogeniture. This policy assumes the maintenance of private property, and is directed to its more equitable distribution among individuals, without contemplating a return to a communal system of ownership, which, if accepted, would supersede all laws of inheritance and powers of disposition. It is the more necessary to insist on this point, because the cause of primogeniture has been strengthened, and the efforts of its opponents weakened, by the unfounded impression that it cannot be touched without reconstructing our whole law of property, whereas no more is demanded or required than an amendment of one single chapter.

The most familiar, as well as the strongest, arguments in favour of primogeniture as it exists in England are derived from considerations which must be called, in the largest sense, political. It was as a powerful bulwark of our landed aristocracy that Burke defended it in his "Appeal from the New to the Old Whigs," emphatically declaring that "without question it has a tendency (I think a most happy tendency) to preserve a character of consequence, weight, *and prevalent influence over others*, in the whole body of the landed interest." The Real Property Commissioners appointed in 1828 fully endorsed this opinion in their first report, which contains a laudation of the settlements then in use as the best means of "preserving families," and as investing the ostensible lord of the soil "with exactly the dominion and power of disposition over it required for the public good." The English law of intestacy is regarded by the commissioners with equal approbation, since it "appears far better adapted to the constitution and habits of this kingdom

than the opposite law of equal partibility, which, in a few generations, would break down the aristocracy of the country, and, by the endless subdivision of the soil, must ultimately be unfavourable to agriculture and injurious to the best interests of the State." Very similar opinions are expressed by Mr. McCulloch, in combating the well-known *dictum* of Adam Smith, that "nothing can be more contrary to the real interest of a numerous family than a right which, in order to enrich one, beggars all the rest of the family." Mr. McCulloch, indeed, though he condemns the old indestructible Scotch entails, since abolished by law, treats it as a characteristic merit of English primogeniture that it sustains a high standard of luxury among country gentlemen of which the example is not lost upon the mercantile classes.

If we analyse this plea for primogeniture somewhat more closely, it will be found to resolve itself into several distinct lines of reasoning. In the first place, it is alleged, or rather suggested, that without primogeniture it would be impossible to maintain an hereditary peerage. The sufficient reply to any such allegation is that an hereditary peerage may be kept up, and is kept up in some Continental states, either by means of *majorats* specially created, or by making certain estates "run" with the titles derived from them, without any general law or custom of primogeniture. Moreover, unless primogeniture be defensible on other grounds, as beneficial to the whole community, it would surely be monstrous that it should be imposed on the families of some hundred thousand freeholders — not to speak of those who may be rendered landless by its indirect operation — for the sake of the few hundred families composing the hereditary nobility. In fact, Burke himself, with all his aristocratic bias, was careful not to rest the case on so narrow a ground; and few admirers of primogeniture would now venture to advocate it in the interest of the Upper House as distinct from that of the nation at large.

But, secondly, it is urged, and not without great force, that primogeniture is actually productive of greater benefits, political and social, to English society as a whole than could be

expected from a system of more equal partibility. It is better, we are told, for rural England at least, to be paternally governed by a comparatively limited hierarchy of eldest sons, whose successors are usually designated long beforehand, than for estates to become subject to division once in each generation, with the risk of passing into the hands of new purchasers having no ancestral connection with land. It is contended that an heir born to a great position and trained from his earliest years to make himself worthy of it acquires habits, and is fortified by motives, which are powerful securities for his future virtue and capacity. This ideal landowner, having been thoroughly instructed in all the manifold duties of property during his father's lifetime, and conscious that a large body of tenants and dependants look to him for guidance and example, enters upon the management of his estate in a spirit altogether superior to commercial self-interest, prepared to do for it what no mere land-speculator would think of doing, and no small proprietor could afford to do. If he is a religious man, he builds churches in neglected hamlets; if he is an agriculturist, he sinks more in drainage and farm buildings than he will ever live to receive back in rent; if he is a social reformer, he erects model cottages, carries out sanitary improvements, patronises schools, or devotes himself to bringing forward the most promising youths in the parishes of which he is lord. In all these enterprises, as well as in the unpaid services which he renders on the magisterial bench, on local boards, and in the varied spheres of influence open to resident landlords, he is actuated by no hope of pecuniary reward or even of personal gratification, but rather by that peculiar sense of honour, compounded of public spirit and family pride, which has played so large a part in the history of England. His character, thus developed, exhibits a marked individuality, but it is by no means a one-sided individuality. With education enough to understand the economical and legal questions which he is daily called upon to settle in practice, with leisure enough to follow the course of affairs both at home and abroad, with refinement enough to appreciate art and literature, with energy

enough to enjoy a life of constant activity in which "county business" is relieved by field sports and a laborious summer holiday, with independence enough to smile at official favours or displeasure, the model English country gentleman represents a species which has never been developed in any other country, and the absence of which goes far to account for the failure of local self-government in France. Is it, we are asked, a legitimate object of State policy to promote the gradual extinction of this class, and meanwhile to disorganise the whole structure of family life within it, for the sake of any doubtful advantage that may be gained by a wider distribution of proprietary rights?

Such a landlord as has been described may be taken as the embodiment of the English landed aristocracy, *as it should be*, from the political and social point of view. Possibly an equally attractive and not less faithful picture might be drawn of a landed democracy, *as it should be*, illustrated by Swiss and American experience. We have not, however, to deal with ideals, but with realities; not with exceptions, however numerous, but with general tendencies. Let it be granted, once more, that a high standard of political and social responsibility is recognised by a very large number of English country gentlemen — the special products, *ex hypothesi*, of primogeniture; and, further, that an institution so bound up with much that is admirable should not be lightly disturbed. Still, we are bound to inquire whether these results have not been purchased too dear; whether the continued maintenance of primogeniture in its integrity involves no countervailing evils, and whether a nearer approximation to ancient usage and foreign codes of land-tenure might not conduce to greater stability and greater unity in our body politic.

It is certainly impossible to ignore the grave political danger involved in the simple fact that nearly all the soil of Great Britain, the value of which is so incalculable, and progressively advancing, should belong to a section of the population relatively small and progressively dwindling. More than twenty years ago Mr. Porter, a very high authority on economical

statistics, arrived at the conclusion that "with scarcely any exception, the revenue drawn in the form of rent has been at least doubled in every part of Great Britain since 1790." In the period which has since elapsed the same causes have continued to operate with still greater activity. It was stated in a report issued by Mr. Goschen, as president of the Poor-Law Board, that the annual value of lands, houses, railways, and other property in the United Kingdom assessed to the income tax, under Schedule A, rose from £53,495,375 to £143,872,588 between 1814 and 1868; and this must be exclusive of the immense sums (estimated by Mr. A. Arnold at £100,000,000) received by the landed interest from railway companies over and above the market price of the land thus sold. From the last report of the Inland Revenue Office it appears that the assessment of the United Kingdom, under Schedule A, amounted to more than £150,000,000, and that of England and Wales alone to £122,599,255, in the year 1873–1874, and the commissioners give reasons for believing the real advance in the value of landed property to have been much greater. But it is the less needful to enter minutely into any such calculations, inasmuch as it is not disputed that for many years past the rental of England has been constantly on the increase; while the fact that persons are willing to invest in land at a low present rate of interest is the best proof either that a further increase in its annual value is expected, or that its annual value is no measure of its real worth to a purchaser. In short, the man who buys land buys not only what may pay him so much per cent, but what may give him social position, and power over his tenants and neighbours. It is precisely this which renders the undue concentration of landed property so detrimental to public interest in quiet times and so perilous to its possessors in times of revolution. We have seen that, whether the aggregate number of English landowners be stated at more than 900,000, or less than 50,000, a few hundreds of them possess more land than all the rest together, having dominion, moreover, over the greater part of London itself, and many of our provincial capitals. Had the legal rights actually possessed by such proprietors as the Marquis of Westminster

been strained to the utmost, instead of being exercised for the most part with forbearance and discretion, legislative interference would assuredly have been needed to avert a revolutionary solution of the English land question. Very serious issues, too, have already arisen in England upon which the interests of rural landowners have been ostensibly in antagonism with those of the commercial and industrial classes. Still more serious risks of collision between town and country are foreshadowed by recent events in France, where the millions of peasant proprietors constitute the one great barrier against communism. Were it possible to imagine a similar crisis occurring in England, it is to be feared that no similar barrier could be presented by the handful of great proprietors, however powerful their existing influence, who have profited so enormously, and with so little effort of their own, by the growing prosperity of the country during the present century.

In the next place we cannot and must not ignore the less favourable aspect of primogeniture, in its relation to public life and national energy. Mr. W. L. Newman, in a remarkable essay on the "English Land Laws," speaks of their tendency "to establish in the centre of each family a magnificently fed and coloured drone, the incarnation of wealth and social dignity, the visible end of human endeavour, a sort of great final cause, immanent in every family." Without adopting this somewhat invidious conception of the system, we may well ask ourselves whether it is, on the whole, for the public good to encourage the development of a class wholly dependent on birth, and independent of merit, for the command of all that makes life desirable. Berkeley asks, "What right hath an eldest son to the worst education?" and Bacon, after describing a new expedient for defeating the recent legislation against entails, touches in a pregnant sentence the very bottom of this question: "Therefore it is worthy of good consideration whether it be better for the subject and sovereign to have lands secured to men's names and blood by perpetuities, with all the inconveniences above-mentioned, or to be free, with hazard of undoing his house by unthrifty posterity." No doubt primogeniture creates a "leisure class," but is this an unmixed benefit? "Leisure" may be essential to æsthetic

and intellectual culture, but it is the leisure earned by honourable exertion or guaranteed by a discriminating use of endowments, not the leisure inherited as a right attaching to private property. It would be difficult, indeed, to show that our peerage and landed aristocracy, with all their overwhelming advantages, have contributed one-half so much to science, literature, or art as the rest of the community who have been thrown upon their own labour for the means of making their bread. Even in politics, where eldest sons long enjoyed a precedence that might easily have proved exclusive, younger sons and men of no family at all have more than equalled them in the attainment of great eminence; and it is no absurd opinion that England would have produced a larger number of really illustrious men, if she had abandoned primogeniture long ago. Were the inheritance of a great name and fortune a security for public virtue, we should expect to find the standard highest in the most exalted order of our nobility; whereas it is too notorious to need specific demonstration that an exceptional indifference to such motives has of late been manifested by persons of ducal rank. No doubt these are exceptions, but they are by no means rare exceptions. They are exceptions, moreover, of which primogeniture must bear the whole discredit, for they are the direct result of settling princely territories upon unborn heirs, of whose capacity and character there is not the smallest presumption. On the other hand, the whole credit of instances, happily more numerous, in which a noble estate is nobly administered, cannot fairly be assigned to primogeniture. Before we can be assured that society is a clear gainer by the existence of a great landowner, combining every perfection of his type, we must be satisfied that he does more good than all the yeomen whom he displaces, and more than he would have done himself if compelled to win his own position in the world, perhaps struggling, like Warren Hastings, for the redemption of a lost patrimony.

Indeed, the merits so freely claimed for primogeniture from this point of view, only appear irresistible so long as we leave out of sight those which may be claimed for the alternative. When, for instance, it is urged that no incentive to honourable ambition

is so potent as the prospect of founding a family, it is forgotten that, whatever be the force of this incentive, it is exhausted by one individual to the detriment of his descendants. The first bearer of a title may have rendered important services to the State in the attempt to achieve success; but no sooner is success achieved than an indefinite series of male successors is placed above the operation of the very motives which inspired and ennobled the exertions of their ancestor. Again, when it is contended that primogeniture keeps up the local settlement of families, which is assumed to be an unmixed benefit, it is entirely forgotten that while it roots the elder branch for the time being in the soil, it uproots all the others. The eldest male in each generation is selected to occupy the family mansion and estates, but the other members of the family are by the same act divorced from the place of their birth, and scattered abroad to seek their living in other parts of England, in the metropolis, or in the colonies. This dispersion of families, which does not equally prevail in any other class, is, in fact, often represented as one of the blessings incident to primogeniture. It is by no means uncommon to hear eloquent discourses on the happiness of younger sons in having to start in life without a competence, and especially without a competence in land, by persons to whom it never occurs that, if the heritage of poverty be so enviable, it would not be difficult to devise means whereby it might be shared by eldest sons also.

Equally delusive is the notion that primogeniture operates as a democratic solvent upon the landed gentry, inasmuch as younger sons, who might otherwise help to form an exclusive aristocracy, are thus constantly thrust down into the plebeian class. The fusion of the upper and middle classes in England, so far as it exists at all, is not the effect of primogeniture, but of national temperament. In Germany, where titles descend to younger sons, the utmost insolence of family pride is manifested by the poorest scions of nobility; in America, where popular opinion almost enforces the equal division of property, social equality is complete, and younger sons are more industrious than in England. In short, men's habits and bearing are governed rather by early

training than by future prospects; and a youth brought up in one of our ducal palaces, though destined to be cut off with a beggarly fortune, is more likely to be an aristocrat in character than if brought up in a frugal home with great expectations.

But these are not the only, or the main, fallacies which beset the social argument in favour of primogeniture. That argument rests upon the further assumption that entails and settlements are, at least, effectual to give us a resident proprietary capable of discharging the first duty of property, by developing to the utmost the productive energies of the soil. This assumption will scarcely bear examination by the light of every-day experience. Instead of primogeniture creating a wealthy resident proprietary, it is certain that it produces, and almost demonstrable that it must produce, the very opposite effect. Out of three English proprietors owning above 100,000 acres each, two have properties scattered, respectively, over eleven counties. Most of our great aristocratic houses possess more than one family place. It is impossible for the head of the family to reside continuously at each; during the whole London season he is nominally in attendance on the House of Lords, and, unless he is exceptionally conscientious, he easily satisfies himself with a flying visit once a year to his less favoured estates. In short, absenteeism is the inevitable consequence of a system which concentrates landed property in few hands, and, where absenteeism exists, the *raison d'être* of primogeniture is materially weakened. But this is not all. Entails and settlements provide an ample security against landed property being divided according to the dictates of natural affection, but they provide no adequate security against its remaining practically without a responsible owner during a whole lifetime, or even against its ultimately passing into the hands of strangers. If a duke ruins himself by gambling, and is declared bankrupt, his domains may be managed for the sole benefit of his assignees during half a century, unless he can obtain the concurrence of his eldest son to sell them outright. In this case, the whole inheritance of a family may be converted into money at a stroke by collusion between two of its members, for the exclusive profit of themselves or their creditors, without the semblance of consent

on the part of the younger children and junior branches, who are supposed to have a moral, if not a legal, interest in the land thus alienated. It is true that where such things happen — and such things do happen — the farmers and cottagers on the estate usually change masters for the better, and this fact points to what is the inherent weakness of primogeniture, economically considered. It vests the control of property, wherever it prevails, not in a series of hereditary landowners, but in a series of hereditary life-tenants, or "limited owners" as they are now called, without the full rights and sense of proprietorship, sometimes heavily embarrassed, and almost always with a standard of unproductive expenditure more than commensurate with their means. Let it be granted that somewhat undue stress has been laid on this particular topic by some opponents of primogeniture, who measure its economical defects by the whole difference between the actual produce of England, and that which might be realised if the entire area of the country, including the waste lands, were brought into the very highest state of cultivation. Let it be granted also that ancestral connection may count for something against a superior command of capital available for agricultural improvements, that rents are seldom excessive on settled estates, and that, until the poor in country districts can be raised to greater independence, they might often suffer by the substitution of strictly commercial relations for their present semi-feudal connection with the family on whose property they are settled. Still, we may confidently appeal to persons conversant with the sale of land to confirm the inference deducible from the laws of political economy, namely, that, in the majority of instances, when land comes into the market, it passes from worse into better hands, and that, consequently, so far as primogeniture artificially obstructs free trade in land and saves the estates of spendthrifts from partition, it works a substantial injury to society. The new purchaser may be comparatively ignorant of country life, but he is not encumbered by rent-charges of indefinite duration, by mortgages contracted to pay off his father's debts, by dynastic traditions of estate-management, by the silly family pride which must needs emulate the state of some richer predecessor, by the

passion for political dictation to which the refusal of leases is so frequently due, or by the supposed necessity of satisfying the supposed expectations of the neighbourhood. Having no liabilities of a past generation to discharge, he can make a liberal provision for younger children out of his rental, by way of life insurance or otherwise; and if this should not suffice with such addition as he may be able to make from invested funds, there is nothing to prevent his leaving them portions of the estate or directing portions to be sold for their benefit. Meanwhile, he is master of his own property and free to develop its resources without feeling that he is either compromising or unjustly enriching an eldest son.

This brings us back to what may be called the domestic aspect of primogeniture; that is, to its influence upon the happiness and welfare of the households immediately affected by it. Apart from the question whether upon other grounds it is expedient, in the interest of the State, to perpetuate a landed aristocracy, we have to consider the question whether the English institution of primogeniture conduces to family peace and virtuous conduct within that aristocracy. This is a question which has been very fully discussed by Mr. Locke King and Mr. Neate, the latter of whom specially insists on the humiliating and unbecoming position in which the father as life-tenant is placed towards the eldest son, as tenant-in-tail in remainder. "It is a hard thing," he says, "for a father to have to confess and excuse his extravagance to a son, or to justify his desire for a second wife. It is a worse thing for a son to judge of his father's excuses, or to decide virtually, as head of the family, whether it is right that his father should be allowed to marry again." Yet this is but one of the forms in which our system of entails operates to sow discord and undutiful feeling in families. Long before the heir to a great estate emerges from boyhood, he is made aware that his fortune does not depend on his father's will or his own deserts. He soon learns to consider the estate as his, subject only to his father's life-interest, and expects to receive an allowance making him to live in idleness, so that a double burden is laid upon the land for the support of two establishments yielding no agricultural

return. As the father grows older, and the son's expectation of succeeding becomes nearer and nearer, painful jealousies are very apt to spring up between them, till at last, perhaps, not a lease can be granted or a fall of timber authorised, lest it may prejudice or be represented as prejudicing the reversion. Of course, there are many examples of families owning settled estates, where the father and eldest son work together in harmony, both looking upon themselves as trustees not only for the rest of the family, but for all placed under their control. But it is self-evident that an indefeasible right of succession vested in the eldest son must tend to weaken parental authority and to facilitate borrowing money upon the security of reversionary interests.

We have already seen that it is fallacious to speak generally of primogeniture as inflicting injustice upon younger children. It is, however, equally fallacious to describe it as securing younger children, regarded individually, a full equivalent for an equal share of the family heritage upon the father's death. In what does this imaginary equivalent consist? Certainly not in anything capable of being reduced to a definite conception, unless it be the enjoyment of a rank determined by that of their elder brother, and of a claim on his influence for their advancement in life, as well as the maintenance at his expense of a country seat where they are welcome and honoured guests. Of these privileges the two last depend entirely on their remaining on good terms with the head of the family, whose interest naturally centres in his own children rather than in his father's children, and whose residence, however freely thrown open to them, cannot after all be treated as their home. As for the first privilege it may well be doubted whether rank or status out of proportion to a man's pecuniary means be not an encumbrance rather than a boon. To have acquired, under a parent's roof, habits, tastes, and ideas of style which cannot be gratified in maturer years without running into debt has been the ruin of many a promising career. To this cause, more than any other, is traceable the self-imposed celibacy too prevalent among younger sons of good family in the metropolis, and inevitably prejudicial not to morality only, but to steadiness and earnestness in practical work. By this cause more

than any other was fostered the shameful jobbery of former days, when the church, the army, and the civil service were refuges for the privileged destitute, and junior members of the aristocracy were said to rely on the budget for their ways and means. Now that patronage has been most properly restricted, that capital and mercantile connection is almost essential for success in business, and that even the bar is becoming more and more dependent on the lower branch of the legal profession, it is very doubtful whether younger sons of county families stand a fair chance in the race of life against young men of the middle class with equal fortunes, more active backing, less sensitive feelings, and a more utilitarian education. If they have no right to complain of a lot which appears very enviable to most of their countrymen, and which only needs exceptional energy to make it so, yet they owe no gratitude to a system which inverts the natural order of human life, accustoming them to ease and luxury in youth, but offering them no adequate provision either for an early settlement or for an early retirement.

From every point of view, then, we are led to an adverse judgment on the extreme development of primogeniture established in England by the joint operation of law and custom. It must be condemned, politically, as aggravating the perilous dualism of town and country; as affording the very minimum of constitutional stability to be derived from the conservative instincts of proprietorship; and as giving a very limited body of landlords a preponderance in the State, none the less unreasonable and obnoxious because it is defended on the untenable ground that it is bound up with the existence of the Upper House. It must be condemned, socially, because it helps to stereotype the caste-like organisation of English classes "in horizontal layers," setting up in thousands of country parishes a territorial autocracy, which, however benevolently exercised, keeps the farming and labouring population in an abnormal state of dependence on a single landowner, while the rural districts have gradually been deserted by the lesser gentry who helped to bridge over the chasm between rich and poor in ancient times. It must be condemned, economically, because it cramps the free play of economical laws in

dealings with land, multiplies the difficulties and cost of transfer, and discourages a far-sighted application of capital to agriculture, either by the landlord, who is usually a mere life-owner, or by the tenant, who seldom holds a lease. It must be condemned, morally, because it holds out to almost every eldest son in what must still be regarded as the governing class the assurance of wealth and power, whether he be worthy of it or not, and subject to no condition but that of surviving his father. Lastly, it must be condemned, in the interest of family government, because it fatally weakens the authority of parents over eldest sons, and introduces a degree of inequality into the relations of children brought up together which often mars the cordiality of their intercourse in after life.

V

These considerations are amply sufficient to prove the expediency — not to say the necessity — of reforming the institution of primogeniture, so far as it depends on law. Upon one principle to be embraced in any such reform, public opinion has long pronounced itself so decisively that it may be taken as already conceded. This principle is the assimilation of real to personal property, in respect of distribution on intestacy. Even the stoutest adherents of primogeniture, as a custom, are beginning to allow that, in default of a will or settlement, the law should incline to equality, especially as intestacies are more likely to occur in poor than in wealthy families. To what extent a change in the law of succession on intestacy would affect the practice of testators and settlors is a matter of mere speculation, on which it would be rash to speak confidently. Many are of opinion that no legal presumption in favour of equal partition would avail in the least to counteract the rooted propensity of Englishmen, once possessed of land, to found and keep up a family, but that, on the contrary, people who are now content to die intestate would forthwith make wills disinheriting all their children but one. This opinion appears to derive some little weight from the history of landed property in Kent, where a great many estates have been disgavelled, and where it is said that wills are not more

favourable to younger sons than in the rest of the island. Others believe that a deliberate reversal of the policy hitherto sanctioned by the legislature would exert a powerful influence on popular sentiment, and, coupled with the direct operation of the new law, would leave a very sensible impression on the rural economy of England within two or three generations. In support of this belief, it may be urged that, in a vast number of cases, the form of settlements and wills is practically dictated by the solicitors who frame them, and who themselves follow, more or less exactly and more or less consciously, the course prescribed by the law on intestacy. A man informs his solicitor that he knows little of legal phrases, but that he wishes to settle his property strictly in the usual and right manner; upon which the solicitor makes a will, giving all the land to his eldest son, and dividing the personalty, if any, among his widow and children, nearly in accordance with the Statute of Distributions. So close is the correspondence of the custom of the law, that whereas, in default of sons, the law vests the land in all the daughters and not in the eldest daughter only, the same rule is adopted, with very slight variation, in most wills and settlements of realty. Were the law altered, however, and especially were it altered after a thorough discussion of the whole question, the uniformity of these usages would be effectually broken. Solicitors would feel bound to ask for more precise instructions from their clients; testators and settlors would more fully realise their responsibility; and the dispositions of landed property hitherto embodied in the common forms of conveyances would have to be reconsidered by the light of modern ideas. Here and there an old property would devolve to several children under the law of intestacy, and yet would be kept in the family by means of such fraternal arrangements as are made every day on the Continent. A few instances of this kind would go far to dispel prejudices against equal partition, while, in the case of properties to which no family sentiment attaches, directions to sell and divide the proceeds in specified proportions could hardly fail to supersede, by their superior convenience, the plan of devising to one child and charging portions for all the rest. Indirectly, therefore, the mere assimilation of real to personal estate, on

intestacy, would probably effect a considerable though gradual revolution in the English land system, even though not supplemented by any other enactment.

Such is the object of Mr. Locke King's original bill "for the better settling the real estates of intestates," introduced in the session of 1859, and re-introduced by Mr. T. B. Potter, in the present session (1876). This bill provides that where any person beneficially entitled to any real estate shall die without a will, that estate shall pass to his executor or administrator, and shall be either divided or sold, exactly as if it were personalty, for the benefit of creditors and the next of kin. A "real-estate succession bill" of the same general character was introduced by the government in the session of 1870, but that bill, unlike Mr. Locke King's, was intended to cover legal, as well as equitable, or beneficial, estates, while it included various saving clauses more or less open to criticism. A third bill, introduced by Mr. Locke King and Mr. Hinde Palmer in the session of 1873, after providing against certain technical difficulties, embraced within its definition of real estate every kind of property which is not personal estate. Not one of these bills, however, goes the length of vesting in the executor realty passing by devise, in the same manner as personalty, including leaseholds, passing by bequest, vests in the executor under the existing law. Nor does any provide that real estate passing by descent or devise shall cease to be exempted from the probate duty imposed on personalty. Still less does any interfere with the rule under which a person succeeding to real estate, though he may inherit in fee-simple, is charged with succession duty on his life interest only, and is permitted to pay this duty by instalments — a rule which amounts to a legislative protection of landed property against a salutary liability to dispersion.

A far more serious and difficult issue arises upon the various proposals for amending the existing law of entail and settlement. These proposals usually assume one of two general forms, widely differing, in principle, from each other. Either they contemplate a reconstruction of our land system on the model of the Code Napoléon, or they are directed to a simple restriction of the

power whereby estates can be tied up for a life or lives in being, and a period of twenty-one years afterwards. Both of these schemes purport to promote free trade in land and to check its aggregation in the hands of an exclusive aristocracy: the former, by constantly and forcibly breaking up properties into fragments, easily saleable; the latter, by prohibiting or curtailing the limitations which prevent their coming into the market. Thus, both involve an abridgment of the liberty now enjoyed by English settlors and testators, but with this important difference, that whereas the one scheme would only abridge the liberty of a bygone generation to control the action of the living generation, the other is directly at variance with full individual proprietorship. Under the French system of enforced partible succession the property of each citizen is rigidly settled, with the exception of a fixed disposable portion, but the settlement is made by the State, instead of by himself, and therefore without regard to peculiar family circumstances. The causes which facilitated the introduction of this great legal revolution into France have been explained by MM. de Tocqueville and Lavergne, and Mr. Cliffe Leslie has done much to repel the objections, both social and agricultural, which have been persistently urged against it in this country. It is a remarkable fact that no French government, whether Legitimist, Orleanist, Imperial, or Republican, has ever attempted to reverse it; nor can we fail to be struck by the opinion so generally expressed in the reports above cited, that in countries which have borrowed this article of the Code Napoléon it is believed to work beneficially. On the other hand, it is not less significant that no practical English statesman has ever advocated its adoption and that even those English theorists who have least sympathy with the rights of property have apparently no great partiality for the agrarian constitution of France and Belgium. Their ideal is not the infinite disintegration of landed property among peasant owners, which they would regard as a retrograde measure, but, on the contrary, its concentration in the hands of one national land commission, or a number of municipal land commissions, under whom private individuals, if allowed to call any land their own, must be content to hold

leases. With that far larger and more important class who are engaged in amassing wealth in the assured hope of leaving it as they please, enforced partible succession would assuredly find as little favour as with the landed aristocracy; and if there be a leaning in this class towards any foreign land law, it is not towards that of France, but towards those of the United States and our own colonies. As for the great mass of Englishmen it may be taken as certain that a law placing the State *in loco parentis*, and declaring that a father who has made his own fortune shall not be free to deal with it by will or to disinherit a child, however worthless and ungrateful, would be in the highest degree unpopular. Upon these grounds, apart from all economical considerations, we must dismiss this proposal as an impossible solution of the problem before us — impossible because it would satisfy no class or school of thought in England, because it has no foundation to support it in the organic framework of English society, and because the very ideas necessary to lay such a foundation are entirely wanting. It would be rash to assert that so direct an interference with personal rights will never be accepted by this country, but we may safely assert that if the only alternative to English primogeniture were indefeasible equal succession, that institution would probably fulfil the prediction of Adam Smith, and survive for generations longer.

For different but equally cogent reasons we must reject as impracticable the bold suggestion of Mr. J. S. Mill, who condemns both the English and French rules of succession, that it would be expedient to restrict, "not what any one may bequeath, but what any one should be permitted to acquire by bequest or inheritance," so that it should not exceed a *maximum* "sufficiently high to afford the means of a comfortable independence." A very little reflection upon the practical application of this suggestion ought surely to convince us that even if it were possible to make it the basis of a testamentary code, it would be hopeless to carry it out with any approach to real equity. But a detailed criticism of it would here be out of place, because it is not so much designed to check the abuses of primogeniture as to realise a favourite idea of Bentham, by diverting the surplus of

private accumulations into the public treasury — an object which may or may not be desirable in itself, but which is beyond the legitimate scope of our present inquiry.

By what means, then, can the vices inherent in the English system of entail and settlement be remedied without impeaching the essential rights of proprietorship and disposition? According to some law reformers, nothing more is required for this purpose than a simple legislative prohibition of entails upon unborn children. There can be no doubt that such a measure, if so framed as to exclude the evasion of its principle by the creation of "powers" or otherwise, might reduce by twenty-one years the period for which land can be lawfully kept *extra commercium* by the force of a single instrument. But it would leave the mischief of limited ownership and contingent incumbrances wholly untouched within the allotted circle of a life or lives in being, or rather, it would stimulate family pride and legal ingenuity to devise new modes of settlement which should make up by their greater complexity for the brevity of their restrictive operations. Indeed, it is quite possible that a mere prohibition of entails upon unborn children, without any further change in the law, would have less practical effect than some minor amendments of a less sweeping character. In the first place, a broad distinction might be drawn between settlements made by will and settlements made by deed *inter vivos*, especially upon marriage. Posthumous dispositions of all kinds are watched in these days, on very sufficient grounds, with increasing jealousy, and posthumous entails are liable to peculiar objections which do not attach to others. When they are derived from wills executed in prospect of death, they are far more likely to be capricious and self-defeating than if they had originated from the same mind in the full vigour of life; if the will has been executed long before the testator's death, from which it, nevertheless, "speaks," it may not represent his final intention, and may even contravene his first intention, owing to circumstances which have occurred since the date of its execution. In any case, the power of entailing by will is exercised secretly, and with much less security for deliberation than is afforded by the negotiations that usually precede a

marriage settlement, which is manifestly, of all settlements, the one entitled to most indulgence. Upon this ground a second distinction might be drawn between entails upon the unborn children of the settlor himself and entails upon the unborn children of some other person. It may, possibly, be reasonable to allow a man about to marry the power of providing for his own unborn children by an ante-nuptial settlement, and yet quite unreasonable to entrust the same power to a stranger, animated, perhaps, with the senseless ambition of immortalising an ignoble name. But it may well be doubted whether it can ever serve any good end that a bachelor should be enabled to designate as his heir a child which may never be born, so irrevocably as to defeat his own capacity of choosing among his children when they are born, or rather when their characters are sufficiently formed. This anomaly might be rectified by an enactment importing into every settlement, by implication of law, a power of appointment, to be exercised at the discretion of the father, but only among the children, and, when exercised, to override the entail. It might also be provided that every tenant for life under an ordinary family settlement should have the power, by a like implication of law, to charge the estate, for the benefit of his wife or younger children, to an amount bearing a stated proportion to its annual value. The proportion so fixed would thenceforth constitute, so to speak, a legal standard of family justice, and though its adoption would be permissive and not compulsory, the consciences of many would be awakened to a sense of their parental obligations, till it came to be thought a disgraceful thing for a nobleman with £50,000 a year to cut off his daughters, either married or single, with portions of £5000 or £10,000.

A far more effective blow might be struck at primogeniture, as founded on family settlements, by absolutely putting an end to life-estates in land. Supposing this to be done, but the right of entailing to be preserved, each successive head of a family would be left to inherit the undivided property as tenant-in-tail instead of as tenant for life, unless the entail had been cut off by his predecessor. The chief difference from the family point of view would be that eldest sons, being entirely in the power

of their fathers, who might exercise the right of disentailing at any moment, would be, as it were, bound over in heavy recognisances to good behaviour. The chief difference from the economical point of view would be, that by virtue of the same right the ostensible owner of a property might charge it for his debts to its full value, instead of only to the value of his life interest. It is, however, incredible that, under such a law, the passion for making eldest sons would remain unabated. Since younger children would be consigned to beggary, where the father's property consisted solely or mainly of land, unless they were given shares of it or charges upon it, a universal custom of breaking entails for this purpose would probably spring up, and apportionments so made out of a fee-simple estate would almost inevitably be far less influenced by the spirit of primogeniture than re-settlements of the prevailing type.

But, having gone thus far, how can we avoid going one step further? It is self-evident that if life-estates were destroyed, no freehold estates would remain, but estates-tail in possession and estates in fee-simple. Now, since estates-tail in possession are convertible into estates in fee-simple at the will of the owner, who has usually the strongest motive for so converting them, it would appear that very little can be either gained or lost by retaining them. We are, therefore, once more brought face to face with the prior and larger question, whether any freehold estate in land short of absolute ownership should be recognised by the law. This question is not to be disposed of by dogmatic assertions that whatever rule be applied to realty must be applied to personalty likewise. To such assertions a controversialist might rejoin that personalty and realty have not in past times been treated by the law on this footing of equality. For instance, the heir taking all the land on intestacy was specially exempted from the rule that sums advanced to sons in their father's lifetime should be deducted from their shares at his death, while, by a monstrous perversion of justice, a mortgage debt contracted on the security and for the benefit of the land, was primarily chargeable on the personal estate until Mr. Locke King's act was passed in 1854. This, however, is not the place to multiply proofs of the partiality

formerly shown to land by a legislature principally composed of landowners — still less to discuss the incidence of taxation upon land as compared with personalty. There are very strong reasons for objecting to complicated reservations of future interests in personalty, and for doubting whether the efforts of the dead to regulate the enjoyment of wealth by the living in the interest of the unborn are sufficiently repressed by the rule against perpetuities and the Thelusson Act. But these reasons have little or nothing to do with the law and custom of primogeniture, which must stand or fall by the peculiar claims and obligations of real property. We are here concerned with the settlement of land, and of land only; nor is it difficult to show that land is, in this regard, a thing *sui generis*, over which the State may and ought to assume a control far more stringent than it would be politic to assume, but not than it might rightfully assume, over other kinds of property. The familiar arguments in support of this position are derived from the fact that land is strictly limited in quantity, at least within the borders of each kingdom, and that its resources in a virgin State are not the production of human industry. These arguments are so far valid as to rebut what does not need to be rebutted — the presumption of any binding analogy between land and money. But the one decisive justification for treating land as an entirely exceptional subject of property is to be found in the entirely exceptional power which the possession of it confers. If we contemplate the supreme influence wielded by landowners collectively over the condition and especially over the dwellings of the people, if we remember that upon their estate-management depend the productiveness of the soil and the food-supplies of the country, if we realise that not only is the land in a physical sense "the leaf we feed on" but in a political sense the substratum of our whole administrative machinery, we shall not fail to perceive the full absurdity of postulating that it should be exactly assimilated to stock in plasticity for the purposes of settlement — but not, forsooth, in facility of transfer, in the course of devolution on intestacy, or in liability to probate and succession duties.

The more thoroughly we appreciate the almost insuperable difficulty of partially reforming an institution so deeply rooted

and widely ramified as the custom of entail and settlement, the more irresistible will appear the conclusion that it is better to reform it altogether, by abolishing all kinds of ownership except ownership in fee-simple, with all customary and copyhold tenures, and by imposing proper restrictions on the length of leases. The conception of such a measure would demand an effort of constructive statesmanship quite as bold as that of the Irish Land Bill, while its execution would affect still vaster interests, and must be spread over a longer period of time. Once carried, however, it would cut half the knots which together make up the English Land Question. One of these knots consists in the difficulty, expense, and delay attending the transfer of land, especially in small lots, and it is sometimes assumed, too hastily, that all this could be rectified by a good system of registration, such as exists in most Continental states, where a public court does what is here done by conveyancers. It should be remembered that even where a transfer of stock is effected by a mere stroke of the pen a long and costly investigation must often be previously undertaken on behalf of the trustees who authorise the sale. No system of registration could bring about free trade in land under settlement, but a register would become invaluable both to vendors and purchasers when every name in it would be that of an owner in fee. Trusts of land, with all their vexatious incidents, would soon be obsolete when there were no reversionary interests to be protected. Mortgages on old family properties would be rarer and more easily cleared off when every acre of land could be turned into ready money at the owner's pleasure. They would, however, be more frequently contracted on new purchases by capitalist farmers when it was discovered that it might be cheaper to pay interest to a mortgagee than rent to a landlord.

But these advantages, it must be confessed, might perhaps be secured by less radical methods. What cannot be secured by any method consistent with the principle of modern entails is, in one word, unity of proprietorship. A settled estate is an estate which has not, and may never have, a real proprietor. For the common family settlement is a contrivance whereby the land itself may be

saved from *morcellement* at the expense of the proprietary interest, which is dissected, split up, and parcelled out into more shares than a French lawyer would think possible. This process is repeated in each generation by a family compact between father and eldest son, in which no other member of the family has any voice, yet neither of the parties is truly a free agent or in a position to reverse the self-renewing dispensation of which they are little more than instruments, and no single person can be identified as the author. Now let us assume that, due provision being made for vested interests, all this ingenious network of particular estates, as they are technically called, were swept away by law, and that every acre of English soil belonged absolutely to some assignable owner. Let us, further, picture to ourselves a case in which the operation of the change would be most severely tested — the case of an heir succeeding to a family property strictly entailed by its original purchaser and held together for centuries by settlements in the eldest male line, but finding himself at perfect liberty to sell it or devise it as he pleases. This is a case, be it remarked, which, but for the practice of re-settlement, would occur daily under the present system, and does occur sometimes, when the eldest son obstinately refuses to commute his estate-tail for a life-estate. It will hardly be disputed that a landowner so circumstanced has a more enviable lot, with greater inducements and greater power to do his estate and all connected with it full justice, than if he were the mere creature of a settlement, but it may be imagined that his gain is more than counterbalanced by some loss elsewhere. Where, then, is this loss, and who is it that suffers by the substitution of ownership for life-tenancy in the case supposed? Not, surely, his ancestors, who, having brought nothing into the world, could not carry anything out, and whose memory it would be superstitious to personify. Not his wife or younger children, whom he is now enabled to endow according to his own convictions of justice, instead of according to a standard determined by the paramount claims of primogeniture, before his marriage, if not before his birth. Not his eldest son, who, by the hypothesis, must have come into the world, or at least emerged from

childhood, after the alteration in the law, and would have been educated in the full knowledge that his birthright, if any, was at the disposal of his father. Not any more distant relatives, whose interest in family estates, unless vested, is usually most shadowy and delusive. Not unborn descendants, who might possibly inherit if the entail were perpetually renewed, under the present law, but who are equally with the dead beyond the reach of appreciable injury. In short, we strive in vain to discover any specific individual, either in *esse* or in *posse*, who could be aggrieved by the legal extinction of life-estates and estates-tail, under proper conditions of time. Still it may be said that "families," that is, territorial families, would sooner or later cease to exist without the artificial safeguard of complex settlements, and that such a result would prejudice not only the happiness of their members in all succeeding generations, but the welfare of all the rural communities grouped around them, and even of the nation at large. And thus we are led back to a point of view from which the actual results of family settlements have already been estimated, and from which it may now be useful to forecast the probable results of the alternative system.

The first, and not the least salutary, of these would be the strengthening of parental authority in those families where it is most needed. The father is, upon the whole, a wiser lawgiver and a more impartial judge within his own domestic circle than any providence of human institution, whether it be embodied in a lifeless deed or in a lifeless statute; and, as Mr. Locke King justly remarks, "if such a disposer of property did not exist, we should only be too happy to discover such a being." Invested with full dominion over his landed estate, the head of each family would no longer have any cause to be jealous of his eldest son, or feel bound to maintain him in idleness during the best years of his life. Doubtless there would still be a strong disposition in most representatives of old hereditary properties to leave the eldest son, if not unworthy, the principal family domain, with the bulk of the land; but since he would depend, like his younger brothers, upon his father's award, and could not raise money upon his expectations, he would, like them, betake

himself to some profession or business, and endeavour to increase, instead of diminishing, his future patrimony. In such cases, the position of the younger children would be very much what it is under the present system, during the parent's life; but even in such cases, and still more in cases where hereditary traditions were less powerful, the father would seldom think himself justified in leaving them a mere fraction of the property at his disposal, and would often direct his outlying estates to be divided among them or sold for their benefit. In these ways land would be constantly "passing out of the family," and though some might be left back to it by childless uncles, the unity of family properties would be greatly and progressively impaired. Moreover, now and then a spendthrift who ought to have been disinherited would be allowed to succeed by a too indulgent father, and might gamble away in a year the purchases and improvements of many generations. This being the contingency which settlements on the eldest son are specially designed to prevent, and the occurrence of which is represented by the friends of primogeniture as an unmitigated calamity, it may be well to pause for a moment, and observe both what it does and what it does not involve.

That it does not involve any destruction or even any "dissipation" of the land itself is so obvious that nothing but the persistent use of confused metaphors could have obscured it. Money, or money's worth, can be eaten, drunk, thrown into the sea, or otherwise literally consumed in unproductive expenditure, but a fortune consisting of land can only be squandered in the sense of being transferred from the dominion of one man into that of another or several others, which may happen to be the best thing which can befall the soil and all who live upon it. Considering the enormous injury done to any estate by the life incumbency of one insolvent — not to say, one absentee — proprietor, as well as the well-known tendency of families to degenerate after one such disgraceful interregnum, the burden of proof certainly lies upon those who hold that, in such an event, the greatest happiness of the greatest number is promoted by keeping it undivided and inalienable, lest an ancient feudal name should

perish out of the county. But this, as we have seen, is a very inadequate view of the whole case. Might it not be expected that if each successive heir of an illustrious house were actuated at once by ancestral pride and the fear of forfeiting his birthright through misconduct or incompetency, a healthy kind of atavism would develop itself in the landed aristocracy, and the virtues manifested by the founders of families would be more frequently reproduced in their descendants? Nay, more, does not our knowledge of human nature, confirmed by the experience of Germany, America, and the Colonies, encourage us to hope that in terminating all indefeasible rights of succession, we should be unlocking hidden springs of energy and genius, calling into action the mettle of that "lounging class" which is the reproach of English primogeniture, infusing unwonted industry into our aristocratic public schools and universities, and making henceforth the antiquity of a family a true mark of hereditary strength?

In the meantime, no sudden or startling change would be wrought by the new law in the characteristic features of English country life. There would still be a squire occupying the great house in most rural parishes, and this squire would generally be the eldest son of the last squire; though he would sometimes be a younger son of superior merit or capacity, and sometimes a wealthy and enterprising purchaser from the manufacturing districts. Only here and there would a noble park be deserted or neglected for want of means to keep it up and want of resolution to part with it; but it is not impossible that deer might often be replaced by equally picturesque herds of cattle; that landscape gardening and ornamental building might be carried on with less contempt for expense; that game preserving might be reduced within the limits which satisfied our sporting forefathers; that some country gentlemen would be compelled to contract their speculations on the turf, and that others would have less to spare for yachting or for amusement at Continental watering-places. Indeed, it would not be surprising if greater simplicity of manners, and less exclusive notions of their own dignity, should come to prevail among our landed gentry, leading to a revival of that free and kindly social intercourse which made

rural neighbourhoods what they were in olden times. The peculiar agricultural system of England would remain intact, with its threefold division of labour between the landlord charged with the public duties attaching to property, the farmer contributing most of the capital and all the skill, and the labourer relieved by the assurance of continuous wages from all risks except that of illness. But the landlords would be a larger body, containing fewer grandees and more practical agriculturists, living at their country homes all the year round, and putting their savings into land, instead of wasting them in the social competition of the metropolis. The majority of them would still be eldest sons, many of whom, however, would have learned to work hard till middle life, for the support of their families; and besides these, there would be not a few younger sons who had retired to pass the evening of their days on little properties near the place of their birth, either left them by will or bought out of their own acquisitions. With these would be mingled other elements in far larger measure and greater variety than at present — wealthy capitalists eager to enter the ranks of the landed gentry, merchants, traders, and professional men content with a country villa and a hundred freehold acres around it, yeoman-farmers, and even labourers of rare intelligence, who had seized favourable chances of investing in land. Under such conditions, it is not too much to expect that some links, now missing, between rich and poor, gentle and simple, might be supplied in country districts; that "plain living and high thinking" might again find a home in some of our ancient manor houses; that with less of dependence and subordination to a dominant will there would be more of true neighbourly feeling, and even of clanship; and that posterity, reaping the beneficent fruits of greater social equality, would marvel, and not without cause, how the main obstacle to greater social equality — the law and custom of primogeniture — escaped revision for more than two centuries after the final abolition of feudal tenures.

THE LAND SYSTEM OF FRANCE

By T. E. Cliffe Leslie

THE object of this essay is to describe the land system of France in respect of the distribution of landed property in that country, with the rural organisation in which it results and to examine its causes and effects. In considering its causes, laws and customs relating to property (including succession and transfer), and to tenure, of necessity form prominent objects of inquiry; but their operation is so bound up with that of economical causes and conditions, that we should miss in place of obtaining clearness by separating what may be termed the legal from the economical class of subjects of discussion. It ought, too, to be premised that although political causes, in that narrow sense of the word which relates merely to the constitution and action of the State, do not fall within the scope of the present essay, yet the fact of their existence ought not to be altogether ignored. There are such causes, and their disturbing influence is powerful. A striking illustration of the potency of this class of causes is afforded in the fact that M. Léonce de Lavergne, in his celebrated work on the "Rural Economy of Great Britain," refers the progress of English agriculture during the last two hundred years, in the main, directly or indirectly, to political institutions, political liberty, and political tranquillity. The influences and effects of the French land system cannot then be fairly estimated without taking into consideration matters excluded by the non-political character of these pages. On the other hand, it will be pertinent and material to their purpose to show that much which is commonly ascribed in this country to political causes (in that wider sense which comprehends all the institutions of a country, especially those relating to property in land), as the chief agencies regulating the division of the soil in France and

the modes of its cultivation, are in reality traceable to the natural play of economic forces, aided, indeed, by the law of France, but not the part of it supposed.

The contrast between the land systems of France and England, two neighbouring countries at the head of civilisation, may, without exaggeration, be called the most extraordinary spectacle which European society offers for study to political and social philosophy. The latest official statistics in France,[1] on the other hand (following an enumeration of 1851, now in arrear of the actual numbers), reckon no less than 7,845,724 "proprietors," including the owners of house property in towns — a number which may be assumed to denote the existence of eight million such proprietors now. Of these, according to the computation of M. de Lavergne, about five millions are "rural proprietors," of whom nearly four millions are actual cultivators of the soil. The official tables themselves return no fewer than 3,799,759 landowners as cultivators, of whom 57,639 are represented as cultivating by means of head-labourers or stewards, as against 3,740,793 cultivating their land *de leurs mains*. This last figure is again subdivided into 1,754,934 landowners cultivating only their own land; 852,934 who, in addition to their own, farm land belonging to others as tenants; and 1,134,190 who work also as labourers for hire. But these figures, as already remarked, are now in arrear; and we may accept as a close approximation to the actual situation the following estimate by M. de Lavergne:

> Of our five millions of small rural proprietors, three millions possess on the average but a hectare[2] a-piece. Two millions possess on the average six hectares. . . . Two million independent rural proprietors, a million tenant farmers or métayers, and two million farmers and servants themselves, as well as the million farmers, for the most part proprietors of land; such is approximately the composition of our rural population.[3]

It would hardly diminish the contrast of such statistics to our own, were we to adopt the figure which M. de Lavergne has introduced into his "Rural Economy of Great Britain," on the

[1] "Statistique de la France, Agriculture, 1868 (Résultats généraux de l'enquête décennale de 1862)."

[2] Not quite two acres and a half.

[3] "Économie rurale de la France."

authority of a statement made by an unofficial member of the House of Commons during a debate — a figure which has often since been reproduced in England on the authority of M. de Lavergne himself — namely, that there are two hundred and fifty thousand owners of land in this country; although it ought to be noticed that there is reason to believe an error respecting the meaning of the technical term "freeholders" was involved in this calculation, and, moreover, that it includes a number of suburban freeholds, and by consequence an urban, not a rural, class of proprietors, far less actual cultivators of land of their own.

Four millions of landowners cultivating the soil of a territory only one-third larger than Great Britain may probably appear to minds familiar only with the idea of great estates and large farms almost a *reductio ad absurdum* of the land system of the French. Those, on the other hand, who have studied the condition of the French cultivators not merely in books, but in their own country, and who have witnessed the improvements which have taken place in it and in their cultivation year after year, will probably regard the number with a feeling of satisfaction. One thing, at least, is established by it, that property in land is in France a national possession; that the territory of the nation belongs to the nation, and that no national revolution can take place for the destruction of private property.

But the inquiry proper to the present pages leads us to examine, in the first place, the causes of so wide a distribution of landed property in France, and, secondly, its economic rather than its political effects. Its economic effects will prove on examination to be in fact its principal cause. The notion commonly entertained in England appears, however, to be that, originating in the confiscations of the French Revolution, the subdivision of the soil has been not only perpetuated but increased in a geometrical progression by the law of succession established by the Code Napoléon. That it did not originate with the Revolution, and that an immense number of peasant properties existed in France long prior to 1789, is indeed well known to all students of French social history; and those who have not concerned

themselves with that side of history will find the fact fully substantiated in the introduction to M. de Lavergne's "Économie rurale de la France." The point which calls for notice here is that, centuries before the Revolution of 1789, one of the causes of the subdivision of land in France (one which we shall find to be the chief cause in our own time) was its acquisition by purchase in small parcels by the French peasantry.

"I have in my hands," says M. Monny de Mornay, in his general report on the results of the recent *enquête agricole*, "contracts of purchase by peasants of parcels of land of less than twenty *ares* (that is to say, less than half an acre) commencing prior to the close of the sixteenth century." It was not the lack of landed property that left the peasantry of France in destitution, and drove them to furious vengeance two hundred years later; it was the deprivation of its use by atrocious misgovernment, and the confiscation of its fruits by merciless taxation and feudal oppression. But in England, also, the number of small landholders at the close of the sixteenth century was still very large, though it had once been much larger; even at the date of the French Revolution it was considerable; and in 1815 (at which date it is calculated that there were 3,805,000 landowners in France), it was, although it had steadily declined, a more significant figure than it is now. In France, on the contrary, the number has increased to about four millions engaged in the actual cultivation of the soil, in addition to nearly a million other small rural proprietors who are the owners at least of a cottage. We are not here engaged to inquire into the causes of the diminution, the disappearance, one may say, of small landowners in England; but the contrast between the movement which has been steadily adding to the number in France and that which has extirpated them in England adds interest to an investigation of the nature and causes of the French agrarian economy. The results of such an investigation can hardly fail, moreover, to throw an indirect light upon the agrarian economy of England.

As already observed, the French law of succession, which limits the parental power of testamentary disposition over property to a part equal to one child's share, and divides the remainder

among the children equally, is the cause commonly assigned in England for the continuous subdivision of land in France. And of an incontestable mischief in the operation of the French law, as regards the subdivision of separate parcels, there will be occasion to take notice hereafter. But a point of much greater importance is that the real effects of the French law of succession cannot be understood without taking into account a process of subdivision taking place in France from a different cause, one really indeed traceable in part to the structure of French law, but not the law of succession — namely, continual purchases on the part of the peasantry of small estates or parcels of land. On this subject notaries in many different parts of France have given the writer surprising information in recent years; and it has indeed for many years been a subject of such common remark in the country that even mere railway passengers through it can hardly have failed to have come upon evidence of it. M. Monny de Mornay states with respect to it, in the chapter of his report on the division of land:

> The fact which manifests itself most forcibly is the profound and continuous alterations in the distribution of the soil among the different classes of the population. In the greater number of departments the estates of 100 hectares might now be easily counted; and taken altogether they form but an insignificant part of the national territory. The proportion cannot be stated in figures, because it varies from one department to another; one must confine oneself to saying that the West and South have preserved more large estates than the North and East.

The North and East, he might have added, are the wealthiest and best-cultivated zones, though the south is now rapidly improving in cultivation and wealth, and, as will presently be shown, the process of subdivision keeps step with this improvement. After referring to the disappearance of estates of even moderate size, M. de Mornay proceeds:

> All that has been lost to the domain of large estates, all that is lost day by day to that of estates of middle size, small property swallows up. Not only does the small proprietor round his little property year by year, but at his side the class of agricultural labourers has been enriched by the rise of wages, and accedes to landed property in its turn. In the greater number of departments 75 per cent at least of them are now become owners of land. Peasant property

thus embraces a great part of the soil, and that part increases incessantly. The price of parcels of land, accordingly, which are within reach of the industry and thrift of the peasant, increases at a remarkable rate. The competition of buyers is active, and sales in small lots take place on excellent terms for the seller, when the interval has been sufficient to allow fresh savings to reaccumulate.

This is in some degree an official statement, and official statements in France are sometimes suspected of exaggerating the prosperity of the nation at large; but it is confirmed by a superabundance of unofficial and unquestionable authority not on the side of imperial government: In one of several passages to the same effect, in his "Économie rurale de la France," and other works, M. Léonce de Lavergne, for instance, says:

The small proprietors of land, who, according to M. Rubichon, were about three millions and a half in 1815, are at this day much more numerous; they have gained ground, and one cannot but rejoice at it, for they have won it by their industry.

And in a very recent communication[1] to the present writer, M. de Lavergne observes:

The best cultivation in France on the whole is that of the peasant proprietors, and the subdivision of the soil makes perpetual progress. Progress in both respects was indeed retarded for a succession of years after 1848 by political causes, but it has brilliantly resumed its course of late years. All round the town in which I write to you (Toulouse) it is again a profitable operation to buy land in order to re-sell it in small lots. . . . I have just spent a fortnight near Beziers. You could not believe what wealth the cultivation of the vine has spread through that country, and the peasantry have gotten no small share of it. The market price of land has quadrupled in ten years. But for the duty on property changing hands (*l'impôt des mutations*), and the still heavier burden of the conscription, the prosperity of the rural population of France would be great. It advances in spite of everything, in consequence of the high prices of agricultural produce.

Along with the subdivision of landed property thus taking place there is also, as we shall see, a movement in the land market towards the enlargement of peasant properties, the consolidation of small parcels, and even in some places towards the acquisition of what in France are considered as large estates; as,

[1] November 6, 1869.

in like manner, contemporaneously with the subdivision of farms, and the more minute cultivation of the soil, there is also a counter-process of enlargement of little farms, and in some places even a development of *la grande culture* on a splendid scale. But let us inquire first, what are the causes, economic and legal, of the continual subdivision by purchase of the soil in France? The reader will bear in mind with respect to it that it is by no means a mere subdivision of existing peasant properties; that small properties are gaining ground in the literal sense, and increasing the breadth of their total territory as well as their total number. And the continuous acquisitions of land by purchase on the part of the French peasantry and labouring classes can be palpably shown to be a perfectly natural and beneficial movement; one proceeding, in the first place, from the natural tendencies of rural economy, from the mutual interest of buyers and sellers, from the growing prosperity and development of France, as its agriculture improves, as it is opened up by railways, roads, internal and foreign trade, manufactures, and mines, and as both country and town become wealthier; proceeding again, in the second place, from, or at least promoted by, a sound and natural legal system; facilitating dealings with land as the interests, inclinations, happiness — in a word, the good of the community — direct.

One obvious consideration presents itself foremost, though too much stress must not be laid on it, that France has aptitudes of soil and climate for several kinds of agricultural produce — the vine, for example — for which *la petite culture*, in the form of manual cultivation (a form to which we shall see hereafter that *la petite culture* is by no means confined), is almost exclusively appropriate. Too much stress must not be laid on this fact, as just said, for the amount of cultivated territory under such kinds of produce does not amount to one-fifteenth of the whole; but it is a fact worth mentioning, on one hand as an indication, so far as it goes, of the chimerical nature of notions prevalent in England, even among excellent farmers, of the ruinous consequences to agriculture of the subdivision of the French soil, and on another hand as presenting a particular example of a general fact of immense importance in the inquiry — namely, that the

class of productions for which *la petite culture* is eminently adapted (whether exclusively, or in common with the large system of farming) is one for which the demand steadily increases with the growth of wealth, trade, and agriculture, and the prosperity of the inhabitants of both town and country, including the small cultivators themselves.

M. Léonce de Lavergne, in his "Rural Economy of Great Britain," after remarking — and the remark is in itself one of no small importance and instructive suggestion — that, "capital being more distributed in France than it is in England, it is expedient that the farms should be smaller, to correspond with the working capital," proceeds:

> The extent of farms, besides, is determined by other causes, such as the nature of the soil, the climate, and the kinds of crops prevailing. Almost everywhere the soil of France may be made to respond to the labour of man, and almost everywhere it is for the advantage of the community that manual labour should be actively bestowed upon it. Let us suppose ourselves in the rich plains of Flanders, or on the banks of the Rhine, the Garonne, the Charente, or the Rhone; we there meet with *la petite culture*, but it is rich and productive. Every method for increasing the fruitfulness of the soil, and making the most of labour, is there known and practised, even among the smallest farmers. Notwithstanding the active properties of the soil, the people are constantly renewing and adding to its fertility by means of quantities of manure, collected at great cost; the breed of animals is superior, and the harvests magnificent. In one district we find maize and wheat; in another, tobacco, flax, rape, and madder; then again, the vine, olive, plum, and mulberry, which, to yield their abundant treasures, require a people of laborious habits. Is it not also to small farming that we owe most of the market-garden produce raised at such great expenditure around Paris?

And further on (notwithstanding the favour which, in his love for political liberty and order, M. de Lavergne regards everything in the economy of England) he observes:

> Our agriculture may find in England useful examples; but I am far from giving them as models for imitation. The south of France, for example, has scarcely anything to borrow from English methods; its agricultural future is nevertheless magnificent.

This passage was written sixteen years ago; and a communication to the writer cited above shows how the predictions it

contains respecting the south of France, and the great future before *la petite culture*, are now being realised under the eyes of its author. But it is not in the southern half alone of France that the peasant cultivator finds a perpetually growing demand for all the most remunerative kinds of his produce. The *enquête agricole*, for instance, shows a great increase in the cultivation of the vine in the East, the West, and the Centre, as well as the South; while in the North — where the vine is, on the contrary, giving way before the competition of the plant of more favoured skies — the demand for the produce of the market-gardens, the dairy, and the orchard, afford more than a compensation. It deserves, moreover, passing remark that the little gardens and orchards round the cottages of the peasantry form, by reason of their careful and generous cultivation, the greater portion of the class of land which in French agricultural statistics obtains the denomination of *terrains de qualité supérieure*. For dairy-husbandry, *la petite culture*, with its minute and assiduous attention, has such eminent aptitude that, even with respect to England, M. de Lavergne remarks:

> Although everything tends to proscribe small farming — though it has no support, as in France, from a small proprietary and a great distribution of capital — though the prevailing agricultural theories and systems of farming are opposed to it, yet it persists in some places, and everything leads to the belief that it will maintain its ground. The manufacture of cheese, for example, which is quite a domestic industry, is well adapted to it.

He adds, what is not to be left out of account, for it is not an account merely of pounds, shillings, and pence:

> There is nothing so delightful as the interior of these humble cottages; so clean and orderly, the very air about them breathes peace, industry, and happiness; and it is pleasing to think that they are not likely to be done away with.[1]

The raising and fattening of cattle for the market is another great department of husbandry which *la petite culture* has almost to itself in France; yet it must be confessed that it is — though a marked improvement is visible — not as yet generally carried

[1] "Rural Economy of Great Britain."

on with the same skill as in Flanders; and the art of house feeding, which is the basis of the Flemish system of small farming, is still in its infancy in many French districts: a fact, however, which only opens a brighter future for *la petite culture* within them. And we may *à fortiori* — by reason, on the one hand, of the hold small farming has already established over both the territory and the mind of France, and, on the other hand, of the more recent development of manufactures, means of communication, and commerce — apply the language which Mr. Caird has used with respect to England:

> The production of vegetables and fresh meat, forage, and pasture for dairy cattle, will necessarily extend as the towns become more numerous and more populous. The facilities of communication must increase this tendency. An increasingly dense manufacturing population is yearly extending the circle within which the production of fresh food, animal, vegetable, and forage, will be needed for the daily and weekly supply of the inhabitants and their cattle; and which, both on account of its bulk and the necessity of having it fresh, cannot be brought from distant countries. Fresh meat, milk, butter, vegetables, etc., are articles of this description; and there is a good prospect of flax becoming an article in excessive demand, and therefore worthy of the farmer's attention. Now all these products require the employment of considerable labour, very minute care, skill, and attention, and a larger acreable application of capital than is requisite for the production of corn. This will inevitably lead to the gradual diminution of the largest farms, and the gradual concentration of the capital and attention of the farmer on a smaller space.[1]

Thus the very productions for which *la petite culture* is specially adapted are the things getting new markets with every new railway, road, manufacture, mine, and increase of national wealth; and that ascent of rural prices in France which M. Victor Bonnet has shown to be the result of its economic development is in effect an ascent in the economic scale of peasant property and the little farm. It follows that the subdivision of the French soil, which has been the subject of sincere regret and pity on the part of many eminent English writers and speakers, as well as of much ignorant contempt on the part of prejudiced politicians, is really both a cause and an effect of the increased wealth of every class of the population — the seller and the buyer of

[1] Caird, English Agriculture.

land, the landowner, the farmer, and the labourer, the country and the town. Instead of being, as has been supposed, a cause of low wages, it has been a consequence of high wages, which have enabled the labourer to become a land-buyer — and even a cause of high wages by diminishing the competition in the labour market, and placing the labourer in a position of some independence in making his bargains with employers. Instead of diminishing agricultural capital, as many English agriculturists urge, it is, in the language of Adam Smith, both cause and effect of "the frugality and good conduct, the uniform, constant, and uninterrupted effort of every man to better his own condition, from which public as well as private opulence is derived, and which is frequently powerful enough to maintain the natural tendency of things towards improvement, in spite both of the extravagance of government and the greatest errors of administration."

But, assuming it to be demonstrable that the subdivision of land in France is in the main the result of natural and beneficial economic causes, it is certain, nevertheless, that it could not take place without the co-operation of legal causes, that is to say, of a legal system which renders dealings in land simple and safe, and, by comparison with the English system, inexpensive. In the absence of natural economic tendencies towards the subdivision of land by its purchase in small lots, the best-constructed legal system of transfer would only tend to its accumulation in few hands; but, on the other hand, under such a legal system as our own, whatever the natural tendencies of the market, the expense, difficulty, and risk of buying very small estates would make them an altogether unsuitable and impracticable investment for the savings of the peasant and the labourer. Even under a law of succession like the French there could be no such poor man's land market in England; the properties partitioned by inheritance would be rapidly added to the domain of the great landowner and the millionaire, able to run the risk of litigation and to procure the best legal assistance. In France every sale and every mortgage of land is immediately inscribed in a public registry in the *chef-lieu* of the *arrondissement*; and any one has a right to enter

and inspect the register, to satisfy himself respecting the title to any estate or parcel of land, and the charges, if any, upon it. The director of the registry is, moreover, bound to deliver for a trifling charge a statement of the title to every estate or parcel to any one demanding it. The private charges for the assistance of the notary in effecting a purchase vary indeed considerably, and are very much heavier in proportion on very small parcels than on large estates. Every sale of land is moreover burdened with the much-complained-of duty of above 6 per cent.[1] But the transaction is simple, expeditious, and secure; and the fact that, in spite of heavier relative cost, high taxation, and the competition of public loans and other investments, the peasant is the great buyer of land in France, only strengthens the conclusion that the subdivision of land by the purchase of small estates is a natural and healthy tendency of the market, springing from the high profits of *la petite culture*, and at the same time from the happiness and independence which the possession of land is found by the experience of the people at large to confer. It shows, too, the error of a common impression in England, that it is much better for a cultivator to rent a larger farm than to farm a small estate of his own. If there be any truth in English political economy, the buyers of land in France are the best judges of their own interests; and we have the practical testimony of the whole nation that the small estate is the better investment of the two for capital and labour. But, moreover, under a sound system of title, and of registration of mortgages, the peasant proprietor is not debarred from increasing the size of his farm; he can raise money expeditiously and safely on his own little property, and farm adjoining land as a tenant, should he find it to his advantage. The French land system gives the small buyer of land the benefit of being able to raise capital on unexceptional security, and that by a process which creates no impediment to its subsequent sale. And such a system, so far from tending to increase the encumbrances on land, tends necessarily, in the first place, to bring land into the hands of those who can make most of it, and secondly, to enable them to

[1] 6 fr. 5 c. per 100 fr., inclusive of the *décime de guerre*.

develop its resources by additional capital, and thereby to liberate it from any charges upon it.

The amount of debt on the peasant properties of France has been enormously exaggerated. M. de Lavergne estimates it at 5 per cent on an average on their total value; and the marked improvement in the food, clothing, lodging, and appearance of the whole rural population is of itself unmistakable evidence that they are not an impoverished class, but, on the contrary, one rapidly rising in the economic and social scale. M. de Lavergne himself arrived at the conclusion that the great estates of England were more heavily encumbered acre for acre than the peasant properties of France; and Mr. Caird concludes his description of English agriculture thus:

> There is one great barrier to improvement which the present state of agriculture must force on the attention of legislature — the great extent to which landed property is encumbered. In every county where we found an estate more than usually neglected, the reason assigned was the inability of the proprietor to make improvements on account of his encumbrances. We have not data by which to estimate with accuracy the proportion of land in each county in this position, but our information satisfies us that it is much greater than is generally supposed. Even where estates are not hopelessly embarrassed, landlords are often pinched by debt, which they could clear off if they were enabled to sell a portion, or if that portion could be sold without the difficulties and expense which must now be submitted to. If it were possible to render the transfer of land nearly as cheap and easy as that of stock in the funds, the value of English property would be greatly increased. It would simplify every transaction both with landlord and tenant. Those only who could afford to perform the duties of landlords would then find it prudent to hold that position. Capitalists would be induced to purchase unimproved properties for the purpose of improving them and selling them at a profit. A measure which would not only permit the sale of encumbered estates, but facilitate and simplify the transfer of land, would be more beneficial to the owners and occupiers of land, and to the labourers in this country, than any connected with agriculture that has yet engaged the attention of the legislature.

Such a measure the owners, occupiers, and labourers of France have long had the benefit of; and the fact that in spite of new opportunities of migration and of steadily rising wages, even the labourer in France is a great land-buyer, proves the profitableness of *la petite culture*, as well as the wealth of the very humblest

and poorest class of the French peasantry. Imagine the English agricultural labourers great buyers of land, and at the same time lending no small sums to the State! One ought, too, to bear in mind, at the same time, the different histories of the two countries, and the condition in which the tyranny, misgovernment, and wars of preceding centuries had left the rural population of France half a century ago, not to speak of later political disasters. Far from objecting to the subdivision of land which has resulted from the legal facilities for its transfer and mortgage, the highest French authorities are urgent for the removal of the obstacles created by the high duties on both sales and successions. "Instead of placing obstacles in the way of changes of ownership (*mutations*[1]), the true policy would be to encourage them. In addition to the direct taxation on land (*l'impôt foncier*), landed property is subject to the much heavier burden on changes of ownership. The value of immovable property annually sold may be estimated at £80,000,000; that which changes hands by succession at £60,000,000; the duties charged upon both amounting to £8,000,000. Such taxation is contrary to every principle, falling as it does on capital and not on revenue."[2]

We are not here concerned with the policy of duties on succession; but there is one incontrovertible injustice in their incidence in France which deserves notice — namely, that the successor pays duty on the entire value of the property, without any deduction for encumbrances, so that it sometimes happens that he actually pays more than the full value of his inheritance. This monstrous system of valuation offers, of course, a great obstacle to raising capital for the improvement of land, while it adds not a little to the encumbrances already upon it — the sort of encumbrances added (sums borrowed to liquidate the duties) being moreover entirely unproductive to the owners.

There are, then, two causes of the subdivision of land in the structure of French law — the law of transfer and the law of succession. But the fact that the subdivision promoted by one

[1] The term "mutations" is applied to all changes of ownership, whether by purchase or inheritance.

[2] M. de Lavergne, Économie rurale de la France.

of these — the law of transfer — is in perfect accordance with the interests of all parties concerned, and the natural tendencies of agriculture in a country of growing wealth suggests a very important conclusion respecting the other — namely, the law of succession. It enables us to perceive why this latter does not produce the practical mischiefs many English writers, not unnaturally, have assumed. The fact is, that (except as regards its operation upon separate parcels, where the property consists of such — a mischief easily cured in the opinion of the highest French authorities) the French law of succession tends in the main to the same result as the natural course of agriculture and free trade in land — namely, the subdivision of land. Secondly, the operation of a good law of transfer tends to cure whatever mischiefs really arise from the partitions effected by the law of succession, there being a steady flow of small lots through the land market towards those who can turn them to the best account. Lastly, it is established beyond dispute that peasant property arrests an excessive partition of land among children by imposing a check upon population. "The law of succession," observes M. de Lavergne, "is still the object of some attacks, which do not succeed in shaking it. It cannot be said of a country which contains 50,000 properties of more than 200 hectares that the soil is subdivided to excess. It is enough to read the advertisement columns of the daily papers to see that lands of several hundred, and even several thousand, hectares are still numerous. There are even too many of them, in the sense that the majority of the owners would be gainers by dividing them."[1] Of smaller properties, again, of only six hectares on the average (of which he reckons two millions), the same authority adds: "The owners of these live in real comfort. Their properties are divided by inheritance; but many of them are continually purchasing, and on the whole they tend more to rise than to fall in the scale of wealth." In place of suggesting a radical change in the law of inheritance, he, like most French economists, suggests only a modification of it in the case of a number of separate parcels, together with a great reduction of

[1] "Économie rurale de la France."

the duty on their exchange, which at present is the same as on a sale. Rational opponents in England of the French law of partition (that is to say, those who are in favour of a greater liberty of bequest, as distinguished from those who defend our own barbarous system of primogeniture and entail) ought to take into account that the French law of succession really effects, in the main, the very results which the testamentary powers they advocate would produce; as is evident from the fact that the vast majority of French parents do not exercise the limited power they already possess over a part equal to one child's share. But the main point is that already adverted to — that a good law of transfer corrects a defective law of inheritance. Not only is there a continual enlargement of little peasant properties by the purchase of adjoining plots, as well as a continual accession to the number of small plots through the natural play of the market; but there is even a natural flow of large capitals toward the land. Hence M. Monny de Mornay remarks that, notwithstanding the great diminution of the total domain of large property, and the perpetual increase in the number of little estates through the purchases of the peasantry and the labouring class, there has been for some years a current of ideas and tastes on the part of unemployed men of fortune, and of capitalists enriched by the trade of towns, towards investment in landed property.[1] The truth is that large and small property compete on much fairer and more natural terms in France than in England, and large buyers of land as well as small, in the former country, are free from burdens on the pursuit of their interests and happiness with which both are loaded in the latter.

It follows in natural sequence that large and small farms — *la grande* and *la petite culture* — like *la grande* and *la petite propriété*, really compete on fairer terms in France than in England; and the former and not the latter is the place to see them on their trial, and to judge of the natural tendencies of rural economy in respect of each. The fact is that, while *la petite culture* is gaining ground and growing more prosperous as well as more perfect and more minute, large farming too has made

[1] *Enquête agricole.*

great progress in France. Not only is there a great domain, within which *la petite culture* has exclusive or special advantages, but there is a common domain, for example, in the production of cattle, cereals, and roots, where both may co-exist and prosper; and there is, again, a domain within which *la grande culture* has its own superior advantages. There were no less than 154,167 farms in France of 100 acres — a number not far short of the total number of farms in England — at the date to which the latest agricultural statistics go back. There were, again, 2489 steam threshing-machines in 1862, as against 1537 in 1852; and it is natural to infer that the chief employment of these was on the larger farms. In the production of sheep, again, *la petite culture* has not shown itself successful in France; though it is proper to remark that the decline of sheep between 1852 and 1862 is attributed by the highest authorities, in the main, not to the subdivision of the soil (the decline in their number being a new phenomenon and subdivision an old one) but to a number of wet seasons followed by disease, to a contraction of the area of sheep-walks by the reclamation of waste land and the division of commons, to an extension of the surface under wheat, and to an improvement in quality as distinguished from quantity. Nevertheless, it appears certain that minute farming under French methods does not give sheep an adequate range, and tends to other productions. Again, both in Belgium and in France the cultivation of the sugar beet, in combination with sugar factories, is found to tend to *la grande culture*, and no finer, larger farms are to be seen in Scotland than many in France, of which beet is the principal produce.

In the departments immediately surrounding Paris large farming is to be seen in the highest perfection, of which the reader who has not visited them will find a description in M. de Lavergne's "Économie rurale de la France." Yet, after noticing several magnificent examples, he adds: "While *la grande culture* marches here in the steps of English cultivation, *la petite* develops itself by its side, and surpasses it in results." The truth is, as we have said, that the large and the small farming compete on fair terms in France, which they are not allowed to do in

England; and the latter has, to begin with, a large and ever-increasing domain within which it can defy the competition of the former. The large farmer's steam-engine cannot enter the vineyard, the orchard, or the garden. The steep mountain is inaccessible to him, when the small farmer can clothe it with vineyards; and the deep glen is too circumscribed for him. In the fertile alluvial valley like that of the Loire, *the garden of France*, his cultivation is not sufficiently minute to make the most of such precious ground, and the little cultivator outbids him, and drives him from the garden; while, on the other hand, he is ruined by attempts to reclaim intractable wastes which his small rival converts into *terrains de qualité supérieure*. Even where mechanical art seems to summon the most potent forces of nature to the large farmer's assistance, the peasant contrives in the end to procure the same allies by association, or individual enterprise finds it profitable to come to his aid. It is a striking instance of the tendency of *la petite culture* to avail itself of mechanical power, that the latest agricultural statistics show a larger number of reaping and mowing machines in the Bas Rhin, where *la petite culture* is carried to the utmost, than in any other department. Explorers of the rural districts of France cannot fail to have remarked that *la petite culture* has created in recent years two new subsidiary industries, in the machine maker on the one hand, and the *entrepreneur* on the other, who hires out the machine; and one is now constantly met even in small towns and villages, old-fashioned and stagnant-looking in other respects, with the apparition and noise of machines, of which the large farmer himself has not long been possessed. Admitting, therefore, fully an important truth in Mr. Wren Hoskyns' remark, that "the machine doctrine of 'most produce by least labour' is, as applied to the soil, the doctrine of starvation to the labourer and dispossession to the small proprietor; and instead of belonging to the advance of knowledge, is a retrogression towards the time when a knight's fee included a whole wapentake, or hundred, and a count was territorial lord over a county,"[1] regarding with

[1] Chandos Wren Hoskyns, M.P., Land in England, Land in Ireland, and Land in Other Lands.

Mr. Wren Hoskyns, machinery as made for man, not man for machinery, and the happiness and prosperity of a large rural population as the true object of agriculture and land systems, we see no reason to believe that the progress of machinery is incompatible with the persistence of *la petite culture*, still less with that of *la petite propriété*, in France.

But if large and small farming compete on fairer terms in France, as elsewhere on the Continent, than in England, and their relative position is accordingly very different, it ought to be added that it is only in the hands of proprietors that either *la grande* or *la petite culture* is fairly tried in France. It is not in the part of the French land system against which English criticism has been directed — the part which differs from the English, namely, the subdivision of landed property and peasant proprietorship — that its weak point really lies; it is, on the contrary, in the part which resembles the English — the system of tenure. The British Islands are far from being the only country in which the question of tenure demands and indeed engages the earnest attention of statesmen and economists; though on the Continent the problem of tenure finds more than half its solution in the system of proprietorship. In France there are two kinds of tenure — namely, (1) by lease, usually for three, six, or nine years (a lease for even eighteen years being quite the exception); and (2) *métayage*, according to which the proprietor and the *métayer* divide the produce, the capital being furnished by the one or the other in proportions varying in different localities. It seems to be supposed by many writers that the métayer, if he has only half the motive to exertion which may be supposed to influence a tenant who has the whole of the produce subject to a fixed rent, enjoys at least the advantage of permanence of tenure. But such is far from being the case in France; very commonly the contract of métayage is but for one, two, or three years. The truth is, the system of short tenures common throughout most of western Europe has a common barbarous origin. It belongs to a state of agriculture which took no thought of a distant future, and involved no lengthened outlay, and which gave the land frequent rest in

fallow; and it belongs to a state of commerce in which sales of land were rare, changes of proprietorship equally so, and ideas of making the most of landed property commercially non-existent. It is right to observe, however, that in many parts of France, although the stated period of tenure is commonly short, the farm really remains commonly in the same family from father to son, from generation to generation, provided only the rent is paid. Now, indeed, with greatly rising prices of agricultural produce, there is a steady and general augmentation of rents; and complaint is much oftener made by tenants of the rise of rents than of the shortness of leases; first, because the tenant is seldom turned out if he farms at all decently and lives in moderation, as he usually does; and secondly, because the tenant has very often already some land of his own, has almost always, if no land, some money saved to buy it. He is not, therefore, in apprehension of being turned out naked on the world; on the contrary, he would sometimes hesitate to accept a long lease, having in view setting up altogether for himself as a proprietor. Again, although no legal customs of tenure for unexhausted improvements remain in France, where the Code has swept away all customary laws, yet compensation for some unexhausted improvements exists under the Code. In the case of manure, for example, laid on by the outgoing tenant, he gets compensation, calculated in proportion to the time during which its unexhausted forces ought to yield profit. Again, where the farming is a joint concern between proprietor and tenant, under the form of cattle-lease called *cheptel*, if the value of the joint property has been increased by the tenant, he is entitled, at the expiration of the lease, to half the additional value. For improvements, however, in the nature of drainage and irrigation no right of compensation of any kind exists; and the absence of it furnishes in part the explanation of destructive droughts even in the best-cultivated parts of France. Under peasant proprietorship, in parts both of Germany and France itself, the most perfect system of irrigation may be found. Peasant proprietorship, coupled with, and in a great measure caused by, a good system of land transfer, is in truth the great redeeming feature of Continental land systems,

which in point of tenure are as defective as our own. A good law of transfer corrects, as we have seen, a defective law of succession, and it also goes far to remedy defective laws and customs of tenure. It is, moreover, peasant proprietorship alone that prevents the questions of both tenure and landed property from assuming the formidable shape on the Continent which they do already in Ireland, and will do erelong in England. The report of the *enquête agricole* suggests additional powers of lease in the case of husbands owning in right of their wives, and of guardians, and, again, a reduction of the duty on leases, with, moreover, a legal presumption of a lease for twelve years in the absence of a written one. But such measures would give about as much satisfaction, and go as far towards allaying agrarian discontent in France as they would in Ireland, were there not a large diffusion of landed proprietorship, and a facility for both tenants and labourers of passing from that status to the status of proprietor, or of combining both.

It is fortunate for France not only that peasant proprietorship already exists on a great scale, but that the tendency of the economic progress of the country, as already shown, is to substitute more and more cultivation by peasant proprietors for cultivation by tenants; and to give more and more to those who remain tenants or labourers the position and sentiments also of proprietors. The increasing demand for, and rising prices of, the produce of *la petite culture* make it more and more a profitable investment of the peasant's savings and labour; and those very rising prices, and the rising wages, which also follow the development of the resources of the country, put both the small tenant and the labourer in a condition to become buyers in the land market. All improvements in the law of property, and in fiscal legislation respecting it, will tend in the same direction, since the costs attending changes of ownership and exchanges of land fall heavier on small than on large properties. All the highest agronomic authorities in France, instead of objecting to the increasing subdivision of landed property, are urgent for the removal of all legal impediments to its division, as well as those which lay disproportionate cost on its acquisition in small portions, as in those which retain it in common ownership.

The question of common ownership is one which ought not to be entirely ignored in a sketch of the French land system, however brief, although but a very few words can be devoted to it here. Upwards of four million and a half hectares of land in France belong in common to various bodies, corporations, communes, and villages. Of this area it is true that a considerable part is in forest, managed by the State, much of which it would be inexpedient to divide and deforest. But the remainder is in great part simply so much land almost lost to the country. In a review of the reports of the *enquête agricole*, at the end of last year, M. de Lavergne pronounced that an effective law for the division and sale of the common lands would do more for the increase of the agricultural wealth of France than all other administrative measures taken together; for in addition to the cultivation of land, now almost waste, that would follow, the communes themselves would obtain funds by the sale for the making of country roads, in which the southern half of France, especially, is for the most part lamentably deficient. An act was actually passed in 1860, to facilitate the division of the common lands, but it has produced but little effect. An impediment to the division of the village commons in France, which has come under the writer's observation, arises from a kind of departure of the beneficial from the legal ownership. An entire commune, made up of several villages having each its common land, is the body whose authority is requisite for a division. It may be the interest of the villagers, and their wish, to divide their own common among themselves, but the rest of the commune would often prefer to see the villager driven or induced to bring his own land, with the communal rights attached, into the land market, where they themselves might become buyers. They are not desirous of giving the villagers an additional inducement to stay where they are. If land existed in such ample abundance that every peasant could have a sufficiency of land of his own to make a comfortable subsistence, or could at least have the advantage and comfort of a cottage and garden, the joint possession by each village of an additional common domain might be regarded as a great benefit; but such is not the situation of matters in

western Europe. Nevertheless the French communal lands, even as they are, give the French peasantry an advantage which the British peasant has been deprived of; and they also provide a fund for the future augmentation of the possessions of the French peasantry, to which there is nothing now corresponding in England.

It is not, however, the object of the present writer to compare the land system of France to that of Great Britain. Those who institute such a comparison will remember that it would be in a great measure imperfect and even delusive if confined to a survey of the present state of agriculture and of the peasantry of France — forward already as is the former, happy as is the latter, in many parts of that country. The history of the two countries, the comparative state of their agriculture and peasantry a hundred years ago, as well as now, must be taken into account. France has had only three-quarters of a century of anything like liberty, and less than half a century of tranquillity and industrial life. Nor in any such comparison should the respective effects of the land systems of the two countries on the town as well as on the country be overlooked. Whoever reflects what the French rural population would be, on the one hand, under a land system like that of Ireland, or even England; and what its town population would be, on the other, if instead of being a third it were more than a half of the whole nation, and if instead of having a political counterpoise in the country it found there only greater political ferment and discontent than its own, — must surely pronounce that the land system of France is not only the salvation of that country itself, but one of the principal securities for the tranquillity and economic progress of Europe.

THE LAND SYSTEM OF BELGIUM AND HOLLAND

By Émile de Laveleye

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I DO not propose to give here an account of the state of agriculture in Belgium and Holland, having done so elsewhere;[1] what I seek is to point out facts relative to both countries, calculated to throw some light upon the following question: What is the agrarian constitution (i.e., the system of ownership and tenure of land) most conducive to the progress of agriculture and to the welfare of mankind?

A preliminary observation is requisite. Thirty years ago economists were in the habit of considering only the production of wealth, paying hardly any attention to its distribution, which they thought to be regulated by inexorable natural laws; the system which yielded the largest produce being, of course, thought the best. But modern improvements in machinery having doubled — nay, trebled — the production without adding to the welfare of all those who seemed to be entitled to it by their industry, endeavours are now made to devise means of better distributing the produce; and there are those who think that of two systems of agrarian organisation, the one which leads to the more equitable distribution of the produce is the one to be preferred.

For example, let us suppose a certain area of land to yield a produce of 1000, distributed thus:

1 landlord	200 parts
1 tenant	100 parts
14 labourers, at the rate of 50	700 parts
	1000 parts

[1] See my books, "L'Économie rurale de la Belgique," and "L'Économie rurale de la Néerlande."

Suppose, on the other hand, the same area of land, worked by 16 small owners, to yield but 960, and so give 60 to each of them. I should, for my part, consider this second organisation superior to the first.

Neither extreme poverty nor extreme opulence is the thing to be desired. Pauperism and divitism alike are the parents of vice in private and revolution in public life.

In England a contrast is often drawn between Flanders and Ireland, and the former is said to enjoy agricultural advantages not possessed by Ireland, such as great markets, a better climate, abundance of manure, more manufactures. This is a point on which some light should be thrown.

Flanders does enjoy certain advantages, but they are equally accessible to the Irish, derived, as they are, from human industry; whereas the advantages possessed by Ireland, coming, as they do, from nature, are not within the reach of the Flemish.

Let us look, first, at climate and soil. The climate of Ireland is damper and less warm in summer, but less cold in winter. In Flanders it rains one hundred and seventy-five days in a year; in Ireland, two hundred and twenty days. On this account, the Irish climate is more favourable to the growth of grass, forage, and roots, but less so to the ripening of cereals; yet the Fleming would be but too happy had he such a climate, cereals being but of secondary importance with him, and often used as food for his cattle. He seeks only abundance of food for his cows, knowing that the value of live stock goes on increasing, while that of cereals remains stationary. Butter, flax, colza, and chicory are the staple articles of his wealth, and the climate of Ireland is at least as well suited to the production of these as that of Flanders.

As for the soil of Ireland, it produces excellent pasture *spontaneously*, whilst that of Flanders hardly permits of the natural growth of heather and furze. It is the worst soil in all Europe — sterile sand, like that of La Campine and of Brandenburg. A few miles from Antwerp, land sells for 20 francs (16s.) an acre, and those who buy it for the purpose of cultivation get ruined. Having been fertilised by ten centuries of laborious

husbandry, the soil of Flanders does not yield a single crop without being manured, a fact unique in Europe.

If in a Flemish farm of twenty-five acres there were but five or six acres of Irish soil, forming good natural pasture, it would be worth one-third more. Not a blade of grass grows in Flanders without manure. Irish soil might be bought to fertilise the soil of the Fleming. The ideal, the dream, of the Flemish farmer is a few acres of good grass. In Ireland nature supplies grass in abundance.

But it may be said that Flanders is well supplied with manure. Doubtless it is; but it is got only by returning to the earth all that has been taken from it. The Flemish farmer scrupulously collects every atom of sewage from the towns; he guards his manure like a treasure, putting a roof over it to prevent the rain and sunshine from spoiling it. He gathers mud from rivers and canals, the excretions of animals along the high roads, and their bones for conversion into phosphate. With cows' urine gathered in tanks he waters turnips which would not come up without it; and he spends incredible sums in the purchase of guano and artificial manures.

True, it may be said, he must have money for that, and the Irishman has none. But where does the Fleming's money come from? From his flax, colza, hops, and chicory — crops which he sells at the rate of from 600 to 1500 francs (£24 to £60) per hectare; and why cannot the Irishman go and do likewise? The Irishman, it may be answered, must grow food for himself. But so does the Fleming; for, in fact, apart from the special crops referred to, he grows enough to support a population relatively twice as large as that of Ireland. It has indeed been argued that the special crops for which Flanders is famous would be out of the question save for access to markets which are not within the reach of the Irishman.[1] But this argument seems to me to have small validity. The chief market for the agricultural produce of Belgium is England. And is London nearer to Ostend and Antwerp than Dublin and Cork are to Liverpool and Manchester? Friesland and Holland send cattle and butter to England, and

[1] See Lord Dufferin on "Irish Tenure," p. 167.

Galicia ships oxen by way of Vigo, across that dangerous Bay of Biscay; why cannot Ireland do the same?

Flanders exports prepared chicory to Germany, to Holland, to all parts of the world, and chicory roots as far as Warsaw; hops to Paris, London, and Scotland; flax to France, England, and even to Ireland itself; tobacco to America; colza and poppy-seed oils to the very south of France; while, on the other hand, it imports corn from Hungary by land, and from Iowa or Wisconsin by lake, canal, railway, and ocean shipping. It is plain, therefore, that produce worth three or four times as much might well be exported from Ireland to England. But there are manufacturers in Flanders, it is said, and none in Ireland, or only in Ulster. Now, on this point it is important to draw a distinction. Flanders possesses undoubtedly a number of small local industries, but they are the consequences, not the cause, of her good husbandry; and any country possessing the latter would be in possession of the former. The great industries of Belgium are situated in the Walloon country, not in Flanders. Complete proof of this is afforded by the following table:

1866	Stationary Engines		Horse-power	
West Flanders	307	1113	3,114	16,094
East Flanders	806		12,984	
Hainaut	2546	4154	73,157	113,086
Liège	1608		39,929	

Thus the two industrial provinces of the Walloon country have seven times as much steam-power as Flanders. Then, again, Flanders has but one great centre of manufacture, Ghent, with 120,000 inhabitants; whilst Belfast has a population of over 150,000, and is increasing much more rapidly than the capital of Flanders.

On the whole, for carrying farming to a high pitch of perfection, Ireland enjoys far greater advantages than Flanders, the land being much superior, the climate equally favourable to the growth of valuable crops, and the same markets being at hand. Unfortunately, the Irish farmer has not the same agricultural

traditions as the Fleming. And, of course, these wholesome traditions, being the work of centuries, cannot be acquired in a day. In every country, the progress of husbandry is slow at first, on the one hand, because the peasant has received little education; and on the other, because the processes resorted to elsewhere cannot be simply copied in agriculture as they are in manufactures; they must be modified in accordance with the nature of the soil and the climate, and that is an *art*. The knowledge and practice of that art in Flanders is of very ancient date, and it may not be thought out of place to say something of its early history.

The most ancient historical records tend to show that the cultivation of the soil was always in a high state of perfection in Flanders. As far back as the time of the Romans, inscriptions on tumuli prove that the inhabitants of the borders of the Scheldt used to resort to England for marl to improve their infertile soil. From one of Eginhard's letters, it appears that in the ninth century flax and vines were grown at the same time that cloth was manufactured in the environs of Ghent. Numerous documents in the Middle Ages, such as registers of monasteries, donations, and leases, reveal the existence of processes of farming almost as elaborate as those in use at the present day; manure in abundance, fields carefully enclosed with magnificent hedgerows, alternate crops, forage and roots for cattle.[1] Rural manufactures arose from the progress of husbandry; linen and woollen fabrics were woven, which ere long became famous. The weavers first lived in the open country, and subsequently flocked into towns; and exportation led to the development of urban manufactures and the growth of a great urban population. It was wealth originating in the good cultivation of the country which created cities, such as Ghent, Bruges, Ypres, Louvain, Brussels, and Antwerp. In turn, the wealth of the cities fostered the progress of agriculture and rural civilisation.

One fact alone is sufficient to show the degree of advancement the Flemish villages of the Middle Ages had reached. As far back as the year 1400, dramatic performances took place in the

[1] See the author's "Économie rurale de la Belgique," chap. i and appendix No. 1.

villages, the pieces being written, got up, and performed exclusively by persons belonging to the country.[1] Most of the villages had their *sociétés de rhétorique*, forming so many focuses of intellectual life. In the sixteenth century, these societies adopted most of the ideas of the Reformation, and on this account were suppressed by the Spaniards. Industry was killed by war and persecution; and agriculture and civilisation were arrested and even thrown back. Happily, the traditions of the past were too deep to be extirpated, and to them Flanders is indebted for her present wealth.

The question arises, Can arts of such ancient birth in Flanders be diffused throughout such a country without the same early traditions and training? It is a problem fraught with difficulties. Something, doubtless, might be done in the way of agricultural instruction, were all persons in an influential position, such as magistrates, landowners, clergymen, to exert themselves for its diffusion, and themselves to supply practical examples of it. But examples of more weight with small farmers would be the spectacle of some of the latter class enriching themselves by an improved system of husbandry. Were two or three intelligent farmers in each district in Ireland, having become landowners or hereditary tenants, to borrow from Flemish agriculture such processes as are applicable to the soil and climate of Ireland, a complete transformation of Irish farming might ensue. In the Belgian province of Hainaut, the example of a single farmer adopting the Flemish rotation was sufficient to bring about the suppression of the fallow throughout the whole region.[2] Could nothing be done to produce agricultural progress in the same way in Ireland?[3]

One most important fact in considering land systems is that the country itself and not the town is naturally the chief market for agricultural produce. It is a great error to suppose that agriculture, in order to thrive, must have a market in great cities for

[1] See Mr. Vanderstraeten's essay in the "Annales de la Société historique d'Ypres," Vol. IV.

[2] "Économie rurale de la Belgique," p. 148.

[3] I have hardly ever met with an answer to the important question, Does the Irish small *proprietor* exhaust his land as much as the small tenant?

its productions. The cultivators, on the contrary, may constitute a market for themselves. Let them produce plenty of corn, animals of various kinds, milk, butter, cheese, and vegetables, and interchange their produce, and they will be well fed, to begin. But furthermore, they will have the means of supporting a number of artificers; they may thus be well housed, furnished, and clothed, without any external market. For this, however, they must be proprietors of the soil they cultivate, and have all its fruits for themselves. If they are but tenants who have a rent to pay and no permanent interest in the soil, they certainly require a market to make money. In a country whose cultivators are all tenants, an external market for their produce is indispensable; it is not so in a country of freeholders: all the latter requires is that agriculture should be carried on with the energy and intelligence which the diffusion of property is sure to arouse in a people.

The province of Groningen was the best-cultivated of Holland before ever it exported any of its products to England, and yet there are no large towns in it; but, thanks to its peculiar system of hereditary leases, the farmers could keep almost the entire produce of their labour to themselves.

Suppose that by the stroke of a magic wand the whole of the tenant farmers of Flanders were to become possessed of the fee-simple of their lands, what would be the result? They would then themselves consume the milk, butter, and meat which they are now obliged to sell, and in consequence have to dispense with animal food and to resort almost exclusively to vegetables for their support; then they would no longer have to send what they do to an English market. Would they be the worse off for that?

Look at Switzerland. In proportion to her population, she has more horned cattle than Flanders; i.e., 35 head to every 100 inhabitants, against 24 in Flanders. Yet while the latter exports butter, oxen, rabbits, etc., to France and England, Switzerland actually *imports* butter, cattle, corn, etc. The consequence is that Switzerland consumes twice as much animal food as Flanders; viz., 22 kilos of meat, 12 kilos of cheese, 5 of butter, and 182 of milk per head per annum. Of the Swiss, indeed, we may say what Cæsar said of the ancient Britons — *Lacte et carne vivunt.*

How is it that the Swiss peasant is much more substantially fed than the Flemish? Because the former is nearly always an owner of the soil, while the latter is but too often only an occupier. The Swiss has not for his market the insatiable stomach of the London market, which the poor Fleming contributes to feed; he has a better one than that, namely, his own.

Thus Switzerland and Groningen prove that agriculture does not stand in need of a large foreign market to make progress. A peasant proprietary is the best of all markets.[1]

On the 1st of January, 1865, there were in West Flanders, on an area of 323,466 hectares, 89,297 proprietors, and 693,904 "parcels" of land; in East Flanders, 155,381 proprietors and 845,220 parcels, towns and villages included; in the entire kingdom of Belgium there were 1,069,327 owners and 6,207,512 parcels. In 1846, the enumeration showed 758,512 proprietors and 5,500,000 parcels of land. Thus it appears that the number of landowners and of parcels has considerably increased.

In Belgium I have never heard a complaint of the present state of things, nor any expression of alarm for the future, such as one used to hear in France before economists of eminence, such as De Lavergne, Wolowski, and Passy, had undertaken the labour of demonstrating the chimerical nature of the fears that the soil would be crumbled to bits.

As regards Belgium, and more especially Flanders, foreigners should not be misled by the great number of parcels. The parcels enumerated are *cadastral* parcels for the purposes of the survey; and very often the surface of the soil shows not the least trace of any such divisions. Not only do many parcels often belong to one and the same proprietor, but a single estate or farm of 10 or 12 hectares generally consists of many of them. The land is divided into farms of different sizes in proportion to the capitals of the cultivators; for example, 50 hectares to 4 horses, 25 to 2, 12 for 1 horse, 5 or 6 hectares to a family without beasts

[1] Is another proof needed? No vines are better cared for than those of the Canton of Vaud, being the agricultural wonder of the Lake of Geneva. Is the wine grown there exported like champagne, claret, or port? Not at all; the Vaudois drink it themselves. That is still better.

of burden, and a little plot for a labourer. When large farms are subdivided it is done on economical grounds; viz., because they fetch higher prices when sold in lots — they are hardly ever divided in consequence of the law of succession. The peasant attaches too much value to the proper outline of a field to break it into pieces; he would rather sell it altogether.

Hitherto the consequence of the progressive subdivision of land in Flanders has only been to raise at once the rental, the gross produce, and the value of the soil; at the same time that the number of landowners has increased, the condition of the cultivators has improved.

In Flanders you do not find the land subdivided in the way it is in Ireland, according to Lord Dufferin, who has shown the evils of the kind of subdivision practised there.[1] From his description it appears that in Ireland, at the death of any holder, and often during his lifetime, the children divide the land among themselves, each of them building a cottage on it; or, if the tenant has no children, he sublets his land to several small farmers, and allows them to settle on it, notwithstanding the stipulations of the lease. Such breaking-up of the land must lead to the most wretched kind of farming, and to pauperism on the part of the tenants. As long as the Irish farmer has no better understanding than that, of his own interest and of the requirements of a sound economical system, no agricultural policy — neither fixity of tenure nor even ownership of fee-simple — could improve his condition. Although the population of Flanders is twice as dense as that of Ireland, a Flemish peasant would never think of dividing the farm he cultivates among his children; and the idea of allowing a stranger to settle and build a house on it and farm a portion of it would appear altogether monstrous to him. On the contrary, he will submit to extraordinary sacrifices to give his farm the size and typical shape it should have.

How is it that the Fleming and the Irishman hold such different points of view? I think it is partly due to the difference of race, and partly to circumstances. The Celt being more sociable, thinks most of the requirements of members of his family,

[1] See Lord Dufferin on "Irish Tenure," chap. iii.

whilst the Teuton thinks more of the requirements of the soil and of good cultivation. Nowhere to my knowledge does the Celt show himself a cultivator of the first order; it is to the German, the Fleming, the Englishman, that agriculture is indebted for its greatest improvements. The Celt has in several counties subdivided the soil for the sake of his family, without regard to the requirements of national husbandry. Throughout Germany[1] law and custom alike have always been opposed to the division of farms. In Upper Bavaria this is carried so far that almost all the land is in the hands of wealthy peasants, keeping up a kind of entail by always bequeathing the whole of their property to one of their children, a small pittance being given to the others. But supposing the Irishman to become the absolute owner of his farm, would he learn and comply with the requirements of the land? A Flemish farmer's son always wants to have a good farm of his own; he would not put up with a hovel improvised on a potato field. Could the Irishman but be brought to practise agriculture as an art, and not as a mere means of bringing a subsistence from the soil, he would soon abandon the miserable system of subdivision which he has adhered to so long. But how is this taste for agriculture as an art to be imparted to him? To extinguish the influence of instincts or tendencies, whether inherent in the race or the historical product of centuries, would it suffice to introduce an agrarian constitution in Ireland similar to that of Flanders, or, better still, that of Switzerland? These are questions which I confess myself not in a position to answer; but they are questions which those who have the Irish land question to solve ought to face, when considering the land system of Flanders.

I think it useful to subjoin a tabulated statement (see table on the following page), giving an idea of the number of farms (*exploitations*) and their relative sizes. These results date as far back as 1846, no returns having been published since.

It has often been asserted that the peasant properties of Flanders are burdened with debts, and that loans on them are raised at ruinous rates of interest.

[1] See W. Roscher, Nationalökonomik des Ackerbaues, p. 229.

Provinces	Proportionate Number of Farms of from									
	50 ares and less (i.e., half an hectare)	51 ares to 1 hectare	1 to 5 hectares	5 to 10 hectares	10 to 15 hectares	15 to 20 hectares	20 to 25 hectares	25 to 50 hectares	50 to 100 hectares	100 hectares and upwards
Antwerp	43.53	8.62	26.90	10.38	4.97	2.26	1.18	1.52	0.14	0.05
Brabant	34.11	17.24	36.20	6.18	2.30	1.15	0.17	1.42	0.53	0.17
Flanders, West	57.42	7.35	19.24	6.27	2.66	2.10	1.72	2.72	0.53	0.02
Flanders, East	44.68	10.08	31.50	7.63	2.77	1.38	0.81	1.02	0.12	0.01
Hainaut	53.46	11.99	23.92	4.83	2.06	1.09	0.66	1.32	0.56	0.11
Liège	45.72	13.81	25.76	7.10	2.91	1.35	0.73	1.40	0.91	0.26
Limbourg	30.41	11.97	32.62	13.34	5.64	2.50	1.13	1.78	0.47	0.14
Luxembourg	18.92	12.75	41.88	12.67	5.28	2.75	1.48	2.78	1.10	0.93
Namur	33.87	18.97	32.92	6.26	2.40	1.19	0.76	1.60	1.44	0.77
Average of kingdom	43.24	12.30	28.99	7.46	3.04	1.59	0.98	1.64	0.58	0.17

The following table shows that the truth lies in the opposite direction. In the remarkable return of the census of 1846, the government published an instructive table, showing which are the provinces of Belgium where loans are raised at highest rates of interest.

Provinces	Proportion of Capital bearing Interest at the Rate of Five Per Cent and upwards to the Aggregate Loans	
		Per cent
Antwerp, Flanders, West, Flanders, East	Small farms	15, 23, 5
Brabant, Limbourg	Middle-sized farms	33, 40
Hainaut, Liège, Namur, Luxembourg	Large farms	71, 36, 76, 82

Thus while in East Flanders no more than five per cent of the loans are raised on usurious interest, in the province of Luxembourg as much as eighty-two per cent of the loans bear interest at five per cent and upwards.

Were a statement drawn up of the debts with which land property is burdened in the various parts of Europe, it would be seen that large estates are generally more encumbered than small ones.

In England the mortgages are reported to amount to fifty-eight per cent of the value of the land; in France only ten per cent, according to Messrs. Passy and Wolowsky. In Prussia the eastern provinces with their large estates show greater indebtedness than those of the west with their small farms.[1] In Lombardy the total landed debt amounts to twenty-five per cent of the value of the land, and in the province of Sondria, where the farms are small, they represent no more than one-and-a-half per cent of that value.

Every one knows La Fontaine's story of Perette going to the market to buy eggs; the eggs are hatched into chickens, the chickens produce a pig and then a calf, and the calf becomes a cow. This dream of Perette's is daily realised by the Flemish small farmer.

We are often told that agriculture stands in need of capital; that institutions in aid of agricultural credit are wanting. I reply, Good husbandry itself creates the capital needed.

In agriculture the capital most needed is live stock, to furnish the manure by which rich harvests are secured.

The Flemish small farmer picks up grass and manure along the roads. He raises rabbits, and with the money they fetch he buys first a goat, then a pig, next a calf, by which he gets a cow producing calves in her turn. But of course he must find food for them, and this he does by staking all on fodder and roots; and in this way the farmer grows rich, and so does the land. The institution in Flanders in aid of agricultural credit is the manure-merchant, who has founded it in the best of forms; for money lent may be spent in a public-house, but a loan of manure must be laid out on the land.

The poor labourer goes with his wheelbarrow to the dealer in the village to buy a sack or two of guano, undertaking to pay for it after the harvest. The dealer trusts him, and gives him

[1] See the excellent work by President Adolphe Lette, "Die Vertheilung Grundeigenthums."

credit, having a lien on the crop produced by the aid of his manure. In November he gets his money: the produce has been doubled, and the land improved. The small farmer does as the labourer does; each opens an account with the manure-dealer, who is the best of all bankers.

The large farmers of Hainaut and Namur do not buy manure, fancying they would ruin themselves by doing so. The Flemish small farmers invest from fifteen to twenty millions of francs in guano every year, and quite as much in other kinds of manure. Where does large farming make such advances?

The chief objection made to *la petite culture* is, however, that it does not admit of the use of machinery, being reduced, as it is alleged, to the employment of the most primitive implements of husbandry, and never raising itself above the first stage of cultivation in that respect. This has been put forward as an incontestable axiom, baffling refutation, and I believe is so regarded in England.

To disprove this I need not point out that to Flanders are due the best forms of the spade, the harrow, the cart, and the plough — Brabant ploughs having for a long time been imported from Flanders into England. It may be said that these are primitive and not very costly implements. I need only reply, Look at what is going on in Flanders at the present day.

The most costly agricultural machine in general use in England is the locomotive steam threshing-machine. Well, this machine is to be found everywhere in Flanders. Some farmers will club together to purchase one, and use it in turn; or else a villager, often the miller, buys one, and goes round threshing for the small farmers, on their own ground, at so much per day, and per hundred kilos of corn. The same thing takes place with the steam-plough as soon as the use of it becomes *remunerative*.

To keep hops in good condition very expensive machines are required to press it. At Poperinghe, in the centre of the hop country, the *commune* has purchased the machines, and the farmers pay a fixed rate for having their hops pressed — which is at once an advantage to them and a source of revenue to the town.

The example of Flanders proves, therefore, that the division of land forms no obstacle to mechanical economy in farming.

Moreover, the subdivision of the soil is perfectly compatible with the methods of *la grande culture* itself; the operations of husbandry may all be on a great scale, while the land is held in shares by a number of persons, like shares in a railway. I see no practical impossibility in such a solution of the problem how to combine the land system of Flanders with all the improvements of the age.

It is often asserted that poor lands can be brought into cultivation only by large and wealthy owners. This is exactly the reverse of the truth — at least as regards the most intractable soils.

In Belgium there are lands so sterile by nature that one-half of all the capital sunk in them is either lost or yields hardly any returns — so that it is not in the interest of any capitalist to work them. In La Campine all those who have attempted to set up large farms, were they ever so well managed, have ruined themselves, or, at any rate, lost money by it.

It is the small cultivator only who, spade in hand, can fertilise the waste, and perform prodigies which nothing but his love of the land could enable him to accomplish. His day's work he counts for nothing; he spares no exertion, and shuns no trouble; and by doing double the work, he produces double the result he would do if he worked for hire. Thus he has made fertile farms of the dunes and quicksands which border our dangerous coast. Penetrating into the interior of these dunes in the neighbourhood of Nieuport, you observe little cottages with a few acres of rye and potatoes around them. Their owners succeed in keeping a few cows, which the children take out to graze wherever a blade of salt grass can be found. With the manure of their cattle they mix seaweed and whatever animal matter the sea throws up, and thus they raise crops of first-rate potatoes and vegetables. La Veluwe — the Campine of Holland — has been reclaimed in like manner inch by inch by the peasantry. I have elsewhere given an account of the rise of one of these sand villages within recent years.[1]

In Savoy, in Switzerland, in Lombardy, in all mountainous countries, land has been reclaimed by *la petite culture*, which large landowners could not have broached without loss. In those

[1] See "Économie rurale de la Néerlande," p. 212.

highlands man makes the very soil. He builds terraces along steep inclines, lining them with blocks of stone, and then carrying earth to them on his back, in which he plants a mulberry- or walnut-tree, or a vine, or raises a little corn or maize.[1] Whoever, after paying for the labour, should take a lease of the ground thus created would not get one-half per cent from his outlay, and therefore a capitalist will never do it. But the small cultivator *does* it; and thus the mountain and the rock become transformed. So, too, under *la petite culture*, even when aided not by proprietorship, but only the kind of tenure to which the name of *emphyteusis* has been given, and which corresponds to a long lease, the most ungrateful land has been reclaimed in Flanders. The tenant, being secure of the future, builds a house, clears the ground, manures and fertilises the rebellious soil; and though he will not reap the same benefit from it that a peasant proprietor would, he reaps much more than either a large farmer or a large proprietor would.

Notwithstanding all the arguments of the most distinguished economists in England, especially Mr. John Stuart Mill, to the contrary, peasant property in land seems still to be regarded there as synonymous with wretched cultivation, and large estates with rich and improved farming. The reason is obvious; the English are accustomed to compare the farming of their own country with that of Ireland. In fact, however, both England and Ireland are exceptions, one on the right, the other on the wrong side. In England there exists a class of well-to-do and intelligent tenant-farmers such as are not to be found anywhere else. In Ireland, on the contrary, there is no peasant property, but only large estates in combination with small tenure, often with a middleman between the landlord and the cultivator — of all agrarian systems the most wretched. Added to this, many centuries of oppression and misgovernment made the Irish people more improvident than the inhabitants of any other country in the civilised world; thus what with a land system of the worst kind, and the general condition of the country, the case of Ireland is surely an exceptional one. All over the continent of Europe there is more live stock kept, more capital owned, more produce and income yielded by small farms than large estates.

[1] See my "Économie rurale de la Suisse et de la Lombardie," p. 71.

Look at Flanders, for an example. The soil is detestable, as we have seen; and it is unhappily a country where a multitude of small farms are held by tenants, as in Ireland; but happily the peasant proprietor exists by the side of the small tenant.

The working capital of a farm, which in England is estimated at from £10 to £12, amounts here to 500 francs (£20). The gross produce may be taken at 600 francs (£24) per hectare. As regards live stock, there were to be found in 1846, 55 heads of horned cattle, 12 horses, and 8 sheep on every 100 hectares superficial area.

For England (not including Ireland and Scotland) M. de Lavergne gives the following averages for the same year: 33 heads of horned cattle, 6 horses, and 200 sheep per 100 hectares.

Bringing these figures down to the common standard of heads of great cattle,[1] we find 64 heads in England and 68 in Flanders; the land of Flanders being at the same time worse than any in England. The average rent of land in Flanders is 100 francs (£4) per hectare, and the value or selling price varies from 3500 to 4000 francs (£140 to £160). Rents and selling prices have doubled since 1830. These results are not equalled in any other part of Europe.

The fact that the Flemish husbandman derives such abundant produce from a soil naturally so poor is due to the following reasons; viz.:

1. The perfection of both plough and spade work.

2. Each field has the perfection of shape given to it, to facilitate cultivation and drainage.

3. Most careful husbanding of manure. None is wasted either in town or country, and all farmers, down to the poorest tenants and labourers, purchase manure from the dealers.

4. The great variety of crops, especially of industrial plants, e.g., colza, flax, tobacco, hops, chicory, etc., yielding large returns and admitting of exportation to the most distant countries.

5. Second, or "stolen," crops, such as turnips and carrots, after the cereals, of English clover, spurry, etc., whereby the cultivated area is in effect increased one-third.

[1] In reducing sheep to great cattle, we have adopted the proportion of 8 : 1, instead of the usual one of 10 : 1, the English sheep being exceptionally superior as regards flesh and wool.

6. Abundance of food for cattle. Although the soil is not favourable to permanent meadows, yet, taking the second crops into account, one-half of the available superficies is devoted to the keeping of live stock. Hence the rise of rents, although the price of corn has hardly increased.

7. House feeding of the cattle, by which the cows give both more milk and more manure.

8. Minute weeding.[1]

Many of these agricultural practices are possibly only where there is a large agricultural population; for which, on the other hand, work is found at the same time by these very practices.

The following table shows the amount of labour employed in the cultivation of the soil in Belgium:

Provinces	Area in Hectares for Every 100 Inhabitants	Number of Field Hands[2] per 100 Inhabitants	Number of Women[3] to Every 100 Men	Number of Women among the Holders[4] to Every 100 Men	Number of Labourers per 100 Hectares of Productive Land	Beasts of Burden per 100 Hectares of Husbandable Land	Number of Hectares per Holder	Number of Owners, Farmers, and Tenants	Number of Labourers of Both Sexes, above Twelve Years of Age
Antwerp	70	26	74	84	83	17	4·76	47,935	106,080
Brabant	47	27	64	78	86	18	3·46	83,130	183,522
Flanders, West . . .	50	23	57	56	65	13	3·86	78,498	149,668
Flanders, East	38	26	60	57	103	14	2·76	88,305	203,561
Hainaut	52	22	70	57	67	23	3·14	105,977	157,071
Liège	64	17	64	69	46	20	4·49	55,347	76,290
Limbourg	130	37	55	61	58	19	6·72	32,170	69,158
Luxembourg	237	37	77	71	51	30	11·35	36,244	69,537
Namur	68	26	50	57	42	19	7·42	44,944	68,714
Aggregate of kingdom	68	25	61	65	97	19	4·55	572,550	1,083,601

[1] See my "Économie rurale de la Belgique." The reader will pardon my referring him to a previous work of mine for particulars which need not be repeated here. Even in the writings of the best foreign authors errors occur with regard to Belgium. Thus Mr. Stuart Mill, in his "Principles of Political Economy," quotes a passage from McCulloch in which Hainaut and the two Flanders are alluded to as being circumstanced alike — whereas, in fact, their conditions are different in every respect.

[2] Comprising the farmers themselves, the farm labourers, and labourers proper.

[3] Being the proportion of women of the three preceding classes to 100 men.

[4] "Holders" includes both freehold- and tenant-farmers.

This table is taken from the official statistics published by the Belgian government in 1850. Those published in 1861 relate to the year 1856, and are less detailed. In the following table, I have given the data relative to the two Flanders, Namur, Luxembourg, and the entire kingdom, as derived from those statistics. Although the two tables are drawn up on different statistical plans, the returns are about the same, and therefore the data may be considered the more trustworthy.

	Flanders, West		Flanders, East		Luxembourg	
	Males	Females	Males	Females	Males	Females
Owners, tenants, managers, and directors of farms . .	32,617	28,132	79,207	35,812	19,223	4,671
Gardeners, kitchen-gardeners, horticulturists, arboriculturists, silk-worm rearers, vintners	1,727	546	1,478	360	62	
Shepherds, graziers, herdsmen	304	4	432		532	46
Field hands and day labourers, farm-servants of both sexes	63,957	39,139	63,174	31,802	14,445	7,227
Wood-cutters and other wood labourers, gamekeepers, and others	673	137	980	1	580	3
	99,278	67,958	145,271	67,975	34,842	11,947

	Namur		Entire Kingdom		
	Males	Females	Males	Females	Total
Landowners and tenants, farmers and managers of estates . . .	15,226	982	300,473	122,630	423,103
Gardeners, kitchen-gardeners, horticulturists, arboriculturists, silk-worm rearers, vintners	308		8,681	1,462	10,323
Shepherds, graziers, drovers . .	627	5	4,811	396	5,207
Field hands and day laborers, farm-servants of both sexes . .	28,621	11,347	388,312	228,115	616,427
Wood-cutters and other wood labourers, gamekeepers, and others	1,059	2	6,757	298	7,055
	45,841	12,836	709,214	352,901	1,062,115

It has often been argued from the example of Ireland that the subdivision of land must tend to produce an excessive increase of the population. Arthur Young prophesied that the subdivision of the soil would convert France into a rabbit-warren.

Now the fact is that in no other country, not actually in a state of decadency, is the increase of the population slower than in France. The same may be said of Flanders, where the population increases at a rate much inferior to that of the rest of the kingdom; viz.:

	Population in		Proportional Increase
	1846	1866	
			Per cent
Flanders, West	643,004	659,938	2.6
Flanders, East	793,264	824,175	3.8
Entire kingdom	4,337,196	4,984,351	15.1

Yet in Flanders the soil is greatly subdivided, as shown by figures given above.

To prove the superiority of large farming, Arthur Young made the following calculation:

To cultivate a district of 4000 hectares, divided into farms of a single plough, 666 men and 1000 horses would be required; whereas in farms of three ploughs apiece the same district would require only 545 men and 681 horses; being a saving of 121 men and 319 horses, capable of other useful employment in the production of manufactured articles. Therefore the district with large farms will be better provided for than the one with small holdings, and consequently large farming is preferable to small farming.

Young's calculation is perfectly correct so far as it goes; nevertheless only one thing is necessary to overthrow his conclusion — namely, that the smaller farms should yield more produce, and more valuable produce, than the large ones; and this is precisely the case all over the continent of Europe, without a single exception that I know of, wherever *la petite* and *la grande propriété* are seen in competition. "At the present day," says

M. Hippolyte Passy,[1] "on the same area and under equal circumstances, the largest clear produce is yielded by small farming, which, besides, by increasing the country population, opens a safe market to the products of manufacturing industry." Which are the richest and most productive provinces of France? Precisely those in which the small landowners are in the majority, especially Flanders and Alsace. In this respect I need but refer the reader to the works of M. Léonce de Lavergne.

In the eastern provinces of Prussia (Prussia proper and Posen) there are hardly any but large estates, worked by the owners themselves. In Westphalia and the Rhenish provinces there are to be found peasant proprietors and small farmers. The eastern provinces are inferior to those of the west, even with respect to live stock, as appears from the following table:

There are to every square mile in the

Provinces	Metres of Road	Inhabitants	Heads of Large Cattle
Posen	5,000	3000	2980
Prussia	4,000		
Westphalia	14,000	6000	3569
Rhineland	17,000		4024

In the western provinces agricultural wages are double what they are in the eastern ones; and while in the latter there are nine inhabitants to every house, there are but five and a half in the former.

As regards Saxony, Dr. Engel's well-known statistics have shown that small farms keep twice as much live stock as large ones.[2]

As to Italy, Mr. Kay expresses himself as follows in his "Notes of a Traveller":

In 1836, Tuscany contained 130,190 landed estates. In the dominions of the Pope, from the frontier of the Neapolitan to that of the Tuscan state, the whole country is reckoned to be divided into about 600 landed estates. Compare the husbandry of Tuscany, the perfect system of drainage, for instance,

[1] See "Mémoire de l'Académie des sciences morales et politiques dans la séance du 4 janvier, 1845."

[2] See "Zeitschrift des Statistichen Bureau's des K. Sächsischen Ministeriums des Innern," No. 1, February, 1857.

in the straits of the Arno, by drains between every two beds of land, all connected with a main drain — being our own lately introduced furrow tile draining, but connected here with the irrigation as well as the draining of land; compare the clean state of the growing crops, the variety and succession of green crops for feeding cattle in the house all the year round, the attention to collecting manure, the garden-like cultivation of the whole face of the country — compare this with the desert waste of the Roman Maremma, or with the Papal country, of soil and productiveness as good as that of the Vale of the Arno, the country about Foligno and Perugia; compare the well-clothed busy people, the smart country girls at work about their cows' food, or their silkworm leaves, with the ragged, sallow, indolent population lounging about their doors in the Papal dominions, starving, and with nothing to do on the great estates; nay, compare the agricultural industry in this land of small farms with the best of our large-farms districts, with Tweedside or East Lothian, and snap your finger at the wisdom of our St. Johns and all the host of our bookmakers on agriculture, who bleat after each other that small farms are incompatible with a high and perfect state of cultivation.

In Lombardy, in the province of Como, where *la petite culture* prevails, the value of the cattle per hectare in cultivation is 161 francs; whilst in the province of Mantua, with its large farms and fine pasture land, it is but 94 francs.[1]

In Portugal there are in the large-farming province of Alemtego but 329,277 inhabitants on an area of 2,454,062 hectares, with an annual production — exclusive of cattle — worth 54,762,500 francs, or 22.72 francs per hectare. On the contrary, in the small-farming province of Minho, there are on an area of 749,994 hectares, 914,400 inhabitants, producing — exclusive of cattle — 37,756,250 francs per annum, or 50.34 francs per hectare, being more than twice the production of Alemtego.[2]

[1] See my "Études d'économie rurale en Lombardie," p. 112, and Zacini's excellent book, "La Proprietà fondiaria in Lombardia."

[2] With reference to Portugal, see the excellent work, "Compendio de Economia rural," by Senhor A. Rebello da Silva, Colonial Minister of Portugal in 1870; and J. Forrester's "Portugal and its Capabilities," in which we find the following passages: "The Minho is justly termed the garden of Portugal." "The Alemtego is the largest, and perhaps naturally the richest, province of Portugal. Once the granary of Portugal, it is now the worst cultivated and most thinly populated of the entire kingdom. The reason of this change may be traced to the following fact. The fecundity of this province has been proverbial from the remotest times; and people of substance, relinquishing the North, came here, and united many small farms in a few extensive estates, which have

In Spain compare Estremadura, the Castiles, or even Andalusia, with the kingdom of Valencia, and with Lower Catalonia. Where small farming prevails, the land is a garden; where the estates are large, a desert.

In Belgium the small-farm provinces, the Flanders, own more cattle, yield more produce, are more carefully cultivated, and have more agricultural capital than those in which large estates are predominant, as will be seen from the subjoined table. Here I have compared East Flanders with Namur; and it is to be noticed that in the former province the land is much poorer than in the latter.

	Namur	Flanders, East
Heads of cattle per 100 hectares	35	68
Working capital per hectare	250 francs	450 francs
Produce per hectare	300 francs	600 francs
Rent per hectare	50 francs	93 francs
Average selling price of land per hectare	1804 francs	3218 francs
Number of inhabitants per 100 hectares	138	263

Let us carry out the parallel drawn by Arthur Young, between the results of small and large farming, by placing spade and plough side by side before us.

Throughout Flanders, and especially in the Waes country, the spade is often used to prepare the soil before sowing. To dig up one hectare with the spade, at the rate of 5 ares per diem, 20 days are required, and an outlay of 30 francs; whilst the same work done with the plough would cost no more than 6 or 7 francs, perhaps less. Thus spade-work costs five times as much as plough-work, which is an enormous balance in favour of the latter.

descended from father to son undivided, undiminished, and through mismanagement and neglect are at this moment so many waste lands in the possession of proprietors who themselves have not the means of cultivating them, and who will not allow others to do so. Hence, there being no employment for agricultural labourers, the Transteganos have dispersed themselves over the other provinces, leaving the feudal lords in full possession of their land, their pride, and their poverty" (p. 102). Of the south of Portugal it may also be said, *Latifundia perdidere Lusitaniam.*

Yet the Fleming persists in calling the spade a gold mine (*De Spa is de Goudmyn der Boeren*); and in Lombardy they have a proverb to the same effect: *Se l'aratro ha il vomero di ferro, la vanga ha la punta d'oro* ("If the plough has a ploughshare of iron, the spade has a point of gold"). How is this to be accounted for? Is it routine or miscalculation? Neither; the peasant only means to say that a large increase in the returns is well worth a larger outlay.

In Lombardy it has been computed that in two fields of the same quality, and manured in the same way, one being worked with the spade and the other with the plough, the returns of the former were to those of the latter as 66 to 28. Assume the produce to be but double, it will make up for twice the excess of expense.

In Flanders this difference is not very considerable for cereals; but the Fleming does not grow corn alone. In the same year in which corn comes up in the rotation he has a second crop (*récolte dérobée*), which of itself is worth three or four times the excess of 25 francs in the cost of spade-work; and if after this he lifts such crops as flax, chicory, tobacco, and colza, returning from 600 to 1200 francs per hectare, the excess in the preliminary outlay dwindles down to a mere nothing. Young, and most English writers on agriculture after him, reason just as if no other crops were grown than cereals; a mistake with respect to the nature and objects of *la petite culture* which vitiates all their conclusions.

I am fully aware that these second crops may be derived also from the plough, and so they are indeed by many Flemish farmers, but then, in the first place, the land is better prepared by the spade for receiving the seed; and secondly, to weed and to gather crops of this kind much more labour is required, and therefore a larger population, by whom the spade-work too may be done. All these things go hand in hand, there being an intimate connection between such economic factors as large population, minute labour, rich produce, small rural industries, like flax-steeping and peeling, preparation of chicory, tobacco, and hops, oil-pressing, etc. It is a system which must be looked at

as a whole; and it is one by which a country, one might say by nature incapable of cultivation, has become the garden of Europe.

Thus the example of Flanders shows that, as far as the production of wealth and even the clear produce are concerned, the spade ought to get a verdict in an action against the plough. I admit at once that it would be well for the spadesman could he have his work done for him by horses and steam engines, that his work is harder and his returns smaller than is good for man. But would he be happier, wealthier, better, under a land system under which he would be a labourer for hire without prospect of elevation? Especially would he be so on the barren sands of Flanders?

The system of tenure usual in Belgium is a lease. In the Middle Ages there also existed the form of tenure known by the name of *métayage*, of which, however, traces are now to be found only in some of the *polders* along the coast of the German Ocean. The cultivation of land by the intervention of a bailiff or steward, so common in eastern Europe, is a rare exception in Belgium.

The leases are, as a rule, very short — nine years at most; very seldom indeed for so much as eighteen years. On the other hand, yearly tenancy and tenure-at-will are also very exceptional. All who devote attention to agriculture, even the agricultural societies, though consisting almost exclusively of landowners, admit that the leases are too short. The tenant is not encouraged to improve; and if he does make improvements, he can hardly be said to reap the benefit of them. The landlords will not grant longer leases, because they want, in the first place, to keep a hold upon their tenants; and secondly, to raise the rents when the leases expire. It may be said that throughout Belgium such increases of rent take place regularly and periodically.

The table on the next page gives an idea of this continuous increase of rents since 1830.

Since 1856, rents have risen even more in proportion than during the preceding period. It may thus be affirmed that, since 1830, the value of land and the rents have doubled. This is a further proof of the proposition so clearly set forth by

Provinces	Increase of Rents from					Rent per Hectare		
	1830 to 1835	1835 to 1840	1840 to 1846	1846 to 1850	1850 to 1856	1830	1856	1866
	Per cent	*Per cent*	*Per cent*	*Per cent*	*Per cent*	*Fr. c.*	*Fr.*	*Fr.*
Antwerp	7.06	10.22	6.32	8.33	15.38	47.50	75	92
Brabant	7.62	12.48	5.05	2.41	17.65	66.27	100	135
Flanders, West	8.10	6.93	5.20	4.05	16.90	60.00	83	102
Flanders, East	13.96	11.39	2.85		21.84	71.40	106	130
Hainaut	8.94	15.58	7.48	1.05	14.58	69.79	110	135
Liège	7.50	14.72	8.11	7.41	16.09	62.35	101	124
Limbourg	10.28	13.02	1.90		17.00	46.80	62	90
Luxembourg	5.14	7.73	4.17	3.03	14.71	28.78	39	44
Namur	9.87	15.35	7.66	10.00	16.36	36.77	64	77
Average of kingdom	9.10	12.74	5.90	2.94	17.14	57.25	82	102

Mr. Mill, that while the rate of profit and of interest has a downward tendency in a progressing community, rent, on the contrary, tends to rise incessantly. Thus the landowners actually reap all the benefit resulting from the progress made by the entire community in various directions. Part of this progressive increase in rent may be traced to improvements made by the farmers in the cultivation of the soil. By raising the rent the landlord lays hold for himself of this advance in the value of the land produced by those who cultivate it.

The increase of the revenue the landlord derives from his land is not the result of improvements executed by himself; and the fact adverted to is a general one, which may be met with everywhere. In whatever cases landlords have actually made improvements, they have got the interest of the outlay in the shape of an additional augmentation of their revenue.

For these reasons, I think that the increase of rent, being due to the progress of society at large, and not to the exertions of the landowners, ought not in justice to benefit the latter alone. It would be but fair to divide this benefit. For a portion of it the tenant should come in; and this he would get if he had a longer lease. Another part of it should fall to the share of the community at large, in the shape of an increase of the land tax.

At the present day the land tax (*impôt foncier*) in Belgium amounts to about 19,000,000 francs (£760,000). It ought to

increase in some proportion to the augmentation of rent, so, however, as not to affect the revenue, which is the reward of improvements; but some portion of that general advance of rents, which is the result of the general progress of the country, ought to be laid under contribution.

All this applies with equal force to the British Isles, but subject to some important restrictions, because, in the first place, English and Irish landlords do not put on the screw of a continual increase of rent with anything like the harshness habitual with Belgian landowners. In the second place, the local rates in England are high, and are rising progressively. Thirdly, rents have been raised in England much less in proportion than they are in Belgium.

Nevertheless, as regards the increase of rent, the land system of Belgium is not so bad as that of England. In both countries part of the clear profit of civilisation is sublimated, so to speak, and deposited in the shape of increased rent in the landlord's exchequer, even though he be an absentee or a do-nothing. But where there are a great many landowners a large proportion of its inhabitants must come in for a share in the increased rent. If, on the contrary, they are few in number, they monopolise the whole of the social benefit. In the former case the working of the economic law of increasing rent will be harsher than in the latter; yet it will be acquiesced in when many benefit by it, while it must sooner or later arouse opposition where it tends to enrich a few families only. The system of rack-renting, which is so much censured in England, is generally practised in Flanders; nevertheless, the tenant bears with it in all meekness, notwithstanding the sufferings it entails on him. In the United Kingdom the landlord would scruple to shear his tenants as they are shorn in Flanders, yet he does not escape reproach; and this is easily explained by the fact that for one landowner in England there are a hundred in Flanders. Still, on the whole, the system of tenure of land in Flanders is anything but worthy of imitation. There are too many tenant-farmers and too few peasant-proprietors; the leases are excessively short and the rents excessively high.

Arthur Young has said: "Give a farmer a nine years' lease of a garden and he will make a desert of it." It is to the honour of the small farmers of Flanders, and of *la petite culture*, that they have falsified this maxim.

Among the various systems of tenure of land in the Belgian and Dutch Low Countries, there is none more interesting to the student of agriculture than the *Beklem-regt*, in the province of Groningen. This is a kind of hereditary lease, something like fixity of tenure. The landlord can never raise the tenant's annual rent. The tenant, on the contrary (called the *Beklemde-meyer*), may bequeath his right of occupation, dispose of it, mortgage it, provided only he does not diminish the value of the land. The *Beklem-regt* is indivisible, and can be held only by one person. Whenever it changes hands the landlord is entitled to a fee called *propinen*, which amounts to one or two years' rent, and is fixed beforehand. This system dates from the Middle Ages, and is still constantly practised in Groningen, even on lands recently reclaimed, on *polders*, and on lands put in cultivation in the turf-bog region. It arises in the following manner: Some landowners being in want of money, and not wishing to mortgage their lands, give hereditary leases of them for a sum of money, thus remaining nominally proprietors; they never part with the fee-simple. Moreover, when the land is sold, the fee-simple and the *Beklem-regt* are disposed of separately, and a higher price is thus realised.

All Dutch economists are alive to the advantages of the *Beklem-regt*, of which the principal ones are as follows:

1st. It gives the tenant absolute security for the future, thus encouraging him to make improvements.

2nd. The tenant purchasing the right of occupation has less to pay for it than he would for the fee-simple, and yet acquires the same security. The higher the rent, the less money he pays. In Ireland, on the contrary, no real right is obtained by purchasing the goodwill or tenant right, and the new tenant must pay the same rent as others. In Groningen an hereditary right of occupation is acquired, and the rent to be paid is moderate and invariable.

3rd. The *Beklem-regt*, being indivisible, prevents compulsory or injurious subdivision. If the division is beneficial, the landlord consents to it in consideration of a share in the profits to be gained by it.

4th. The *Beklem-regt* precludes the immoderate increase of the population, because, on the one hand, it limits the number of farms, and, on the other, because the farmer himself being in good circumstances, his sons are not likely to allow themselves to fall into distress.

5th. By this mode of tenure a number of well-to-do quasi-proprietors are made to reside in the country, cultivating the land with capital and science, whereas if the landlords were to hold the land themselves, they would go and live in the towns, and let their estates to tenants at ruinous rents.

Thus instead of tenants with the fear of losing their holdings always before their eyes, and ground down by ever-increasing rents, this system, derived from the Middle Ages, has created a class of semi-proprietors, independent, proud, simple, but withal eager for enlightenment, appreciating the advantages of education, practising husbandry not by blind routine and as a mean occupation, but as a noble profession by which they acquire wealth, influence, and the consideration of their fellow-men; a class ready to submit to any sacrifice to drain their lands, improve their farm-buildings and implements, and looking for their well-being to their own energy and foresight alone.

Systems of tenure of land similar to the *Beklem-regt* used to exist in the Channel Islands and in Brittany by the name of *domaine congéable*, in Lombardy by the name of *contratto di livello*, and in Portugal by that of *aforamento*.[1] As long as the hereditary *tenants* cultivate the land for themselves, the *Beklem-regt* is attended only with beneficial effects; but as soon as they sub-let it becomes subject to the drawbacks of common leases, with the difference that in that case the sub-tenant must pay a double rent — viz., the fixed one to the landlord, and a variable one to the hereditary tenant.

Could the *goodwill* in Ireland be converted into *Beklem-regt* or *aforamento*, the country might perhaps be saved by it. But then

[1] See the note on *aforamento* at the end of original essay. —Ed.

the Irish peasants would, in the first place, have to respect the *indivisibility* of their leaseholds and of the farms for which these are granted. Moreover, they would have to pay to the landlords themselves, not to the outgoing tenants, the price of the hereditary leases for which they would come in. One must add, however, that it would in all probability be very difficult to make them understand and appreciate this mode of tenure. Even in the provinces adjoining Groningen, where the wholesome effects of this system are seen and appreciated, it is not adopted.

Lawyers, inspired with the ideas of uniformity and simplification of the French Revolution, are, moreover, opposed to a system which formerly used to prevail in a great part of Europe. It has likewise disappeared in many countries by degenerating from its original form, or by reason of being coupled with improper regulations. In Lombardy the *contratto di livello*, enforcing certain payments in kind, prevented the hereditary farmer from growing such crops as he liked, and thus formed an obstacle to progress in husbandry. Instead of trying to do away with this system, it should be preserved, and even brought into general use, with improvements in its form.

The Flemish *Pachters-regt*, or farmer's right, consists in the liability of the incoming tenant to pay the outgoing one for the value of the straw and manure on the land, besides the manure in stock, and the manure and crops on the ground; being a compensation for *unexhausted improvements*, but given on a more systematic plan than in England.

The existence of this custom in Flanders dates as far back as the Middle Ages, which is another instance of the progress the country had achieved, even in those remote days. At present the *Pachters-regt* varies according to districts, and the differences seem to coincide with the areas occupied of old by the various German tribes. In the neighbourhood of Ypres and Courtrai not more than one-third of the value of the manure from which a crop has already been raised is given; near Ghent the indemnity amounts to one-half of that value; and in the Waes country a fixed rate of twenty-one francs is paid per hectare for the manure sunk in the two foregoing years. The total amount of

compensation varies according to the state of cultivation of the land and the time of taking possession of it.

In the southern districts, where the leases commence in October, the *Pachters-regt* applies only to the half-exhausted manure and the manure kept in tanks, and does not exceed 70 or 80 francs per hectare on an average; whilst in the neighbourhood of Ghent, where the farmers take possession at Christmas or on the 1st of March, the indemnity is paid for the crops in the ground as well as the manure, and amounts to 400 or 500 francs for every hectare sown with corn (*emblavé*).[1]

In Mr. Caird's "Letters on English Agriculture" it is stated that in the counties of Surrey and Essex an *inventory* is usually drawn up, similar to the Flemish *prizy*, which is an inventory of unexhausted improvements. However, Mr. Caird is not very much in favour of a custom which, in his opinion, is attended with the following two drawbacks:

1st. Costly valuations, lawsuits, and law expenses.

2nd. The compensation for the inventory exhausts the resources of the incoming tenant.

Neither of these two drawbacks exists in Flanders, and neither ought to exist in England. The inventory is drawn up by experts, and frequently by the notary of the locality, at a trifling expense, and litigious proceedings hardly ever arise from this. Where the crop in the ground is to be valued, as in the neighbourhood of Ghent, the operation is indeed attended with some difficulties; but where the new-comer takes possession in October, as in the environs of Courtrai, nothing need be valued except the farmyard manure (of which the cubic volume may be readily ascertained) and the half-exhausted manure; and the inventory is taken with the greatest facility.

As regards the alleged diminution of the incoming tenant's resources, this charge is groundless; on the contrary, the *prizy* increases his capital. He pays for manure on the spot, which he

[1] In an interesting manual for valuers of indemnities to be paid to outgoing tenants, entitled "Het Pachters-regt; door L. Delarue en van Bockel," I find valuations of compensations for lands sown with barley, colza, and wheat, amounting to from 400 to 500 francs per hectare; of which upwards of 300 francs are for manure.

would otherwise have to procure from some remote quarter. It is owing to the *prizy* that the outgoing farmer does not neglect the land even in the last year of his tenure, and the incoming tenant finds it in perfect condition, instead of its being exhausted and overgrown with weeds. No outlay is less regretted by the Flemish farmer than the one for the inventory. His saying is, *Hoe hooger hoe beter*, "the higher the better."[1]

In Flanders all agricultural authorities agree that the *Pachters-regt* is indispensable to good culture. They go so far as to demand, in the interest of rural economy, that the local customs relative to this right be systematised and regulated by law. In fact, the land in Flanders is naturally so excessively poor that if the outgoing tenant neglects it during the last two years of his occupation, the farm is ruined, and a great expenditure becomes necessary to put it into its proper condition again.

The Flemish *Pachters-regt* deserves to be introduced everywhere for the following reasons:

1. It is equitable, compensating, as it does, the farmer for his improvements and good cultivation.

2. It prevents the exhaustion of the land during the last two or three years of the lease.

3. It furnishes the incoming farmer with manure, which it is his interest to have. Both the Flemish and the Chinese properly think that there is no better investment to be made than in manure.

Those who cultivate the soil are either landowners, tenants, or labourers. Let us now examine the condition of each of these three classes in Flanders.

If the cultivator of the land is the owner of it at the same time, his condition is a happy one in Belgium, as everywhere else, unless the plot he holds is insufficient to support him, in which case he has to eke out his existence by becoming also a tenant or labourer. But as a rule the peasant-proprietor is well off. In the first place, he may consume the entire produce of his land, which being very large, especially in Flanders, his essential wants are

[1] I need hardly add that nothing of all this applies to the Ulster tenant right as described by Lord Dufferin on "Irish Tenure," p. 116.

amply satisfied; secondly, he is independent, having no apprehensions for the future; he need not fear being ejected from his farm, or having to pay more, in proportion as he improves the land by his labour.

Yet the mode of living of the little landowner, who works as a peasant, differs very little from that of the tenant-farmer. His food is about the same, except that he eats bacon more frequently, killing a pig or two for his own use, and that he drinks more beer. His clothes, habits, and dwelling also resemble those of the other class, save that they denote rather easier circumstances. He lays money by to purchase land and give his farm a better outline; and it is owing to the competition of peasant-proprietors in the land-market that the value of real property is rising so rapidly.

What remains to be desired is not that the peasant-proprietor should add to or refine his wants, for the progress of civilisation is not co-extensive with that of epicureanism,[1] but that he should pay more attention to his own intellectual improvement, and to this a portion of his annual savings might very well be devoted.

The situation of the small Flemish tenant-farmers is, it must be owned, rather a sad one. Owing to the shortness of their leases, they are incessantly exposed to having their rents raised or their farms taken from them. Enjoying no security as to the future, they live in perpetual anxiety. So much does this fear of having their rents raised tell upon their minds, that they are afraid to answer any question about farming, fancying that an increase of rent would be the inevitable consequence.

Rack-rents leave the small farmer barely enough to subsist on. I do not think his working capital returns three per cent, and he works himself like a labourer. However, he is always properly clothed, and on Sundays he dresses just like a *bourgeois*. His wife and daughters, who work barefooted during the week, are stylishly dressed on Sunday, wearing crinolines, ornaments, and flowers in their hair.

[1] In my opinion it is a great mistake to consider the refinement of wants and luxury in private life as a *criterion* of civilisation. In the best days of ancient Greece, private comfort was all but unknown. In ancient India and Judæa the men whose minds conceived the ideas on which our moral life is based lived in quite a primitive way.

It ought to be added that suitable farm-buildings are almost always erected by the landlord, and remarkably well kept by the tenant; this is quite a traditional custom in Flanders, and has been so for many ages. Every one is alive to and respects the requirements of good farming. The properties cultivated by the proprietors themselves, although in a minority, form a kind of model or type, and every one does his best to imitate them. They are looked upon as standards from which the peasants would be ashamed to depart very far. Their influence in this respect has been very forcibly pointed out by Mr. Cliffe Leslie in a remarkable article on "The Farms and Peasantry of Belgium,"[1] in which he says: "As Falstaff could boast of being not only witty himself, but the cause of wit in other men, the peasant-proprietor may boast that he is not only a good farmer himself, but the cause of good farming in other men."

Nothing gives a more charming idea of country life than the little farmhouses of Flanders, especially in the Pays de Waes. With an orchard in front, where the cows graze in the shadow of the apple-trees, surrounded by well-kept hedges, the walls whitewashed, doors and window-frames painted in green, flowers behind the windows, the most perfect order everywhere, no manure lying about, the whole presents an appearance of neatness, and even of ease and comfort.

The reason why these small farmers are ground down by rack-rents is that there are too many of them. On 100 hectares, or 1 square kilometre (.386 square mile), there are in West Flanders 200, in East Flanders 270 inhabitants, against 76 in France, and 136 in Lombardy. The peasants of Flanders unfortunately will not leave their own province, and their intense competition for farms raises the rents in a manner ruinous to themselves.

Above the small farmers there is a class of small proprietors, who profit without scruple by this competition. Having just enough to support themselves, they do not trouble themselves about the condition of the farmer or anything else, being anxious to maintain "their position in the world," as they term it.

[1] See *Fraser's Magazine* of December, 1867, and T. Cliffe Leslie's valuable book, "Land Systems in Ireland, England, and the Continent."

No parallel can be drawn between the Belgian and the English landowner. The latter, I believe, acts upon considerations unknown on the Continent, and no inference can therefore be drawn from so exceptional a case. Not that the English landlord is *intus et in cute* better than other men; but he is subject to a higher public opinion, and being a much wealthier man, he is not tempted to screw the last farthing out of his tenant. Hence the condition of the English tenant-farmer is a happier one than that of the Flemish.

As a rule, peasant property is an excellent thing wherever the proprietor is himself the cultivator; but where it exists side by side with leasehold farming in an over-populated country, the tenant-farmer is placed in a worse condition than if the estates were large. But it is most important to bear in mind, in comparing the condition of the agricultural population in Flanders and England, that the small Flemish farmer who cultivates his land with his own hands corresponds, not to the English tenant-farmer, but to the English farm-labourer. Now our small farmer, though hardly better fed than the English agricultural labourer, has a decided advantage over the latter; he doubtless has the cares and responsibility his superior position entails, but on the other hand he acquires from it habits of providence and self-control, and the exercise of his intellectual faculties.

Let us next glance at the condition of the agricultural labourer in Flanders. His wages are very low, ranging from 1 franc 10 centimes to 1 franc 50 centimes per day, without board. In the Walloon country, in which are all the large centres of industry, the wages are about double of this, owing to the mines and manufactories competing with the land in the labour-market. Some facts connected with this are almost incredible. In the environs of Liège, an agricultural labourer earns $2\frac{1}{2}$ francs a day, while near Hasselt, at a distance of no more than four leagues, he earns but 1 franc; the country is Flemish, and he is prevented by the difference of language from going to a Walloon district, in which he might earn much higher pay.

For breakfast the Flemish labourer has bread and butter, with chicory coffee and milk; for dinner, potatoes, vegetables, and

bread; at 4 P.M., bread and butter again, and for supper the same fare as for dinner; very seldom a little bacon, and as for butchers' meat — four or five times in a year. Those who live with the farmers get pork more frequently.

On the other hand, the farm-labourer is generally well housed. For himself and his family he always has a house, with at least two, more frequently four, rooms, generally kept in good condition, and having an acre or half an acre of land belonging to it, where the man grows vegetables, potatoes, and rye; and there is, besides, a goat which gives milk to the household.

NUMBER OF FAMILIES FOR EVERY 100 HOUSES IN THE RURAL DISTRICTS OF

	1846	1856
Flanders, West	103	101
Flanders, East	104	102
The entire kingdom	104	104

Thus the number of houses in Flanders has increased as compared with the rural population, who have by this means found better accommodation.

No remarks need be made on the beneficial effects of a good home on a man's morality and self-respect. This applies to the country as well as to towns, and accounts for the fact that the Flemish population, badly fed and little educated as it is, yet presents all the outward appearance of well-being and civilisation.

It may be affirmed that in normal years no pauperism is to be found in the rural districts of Flanders, and beggars are very rare. The labourers and small artisans live poorly; yet having nearly all of them a little plot of land to work, they are at any rate kept from starving. At the time machinery supplanted hand-spinning, a severe crisis took place indeed; but the last traces of it have now disappeared.

A stranger visiting Flanders should guard against rashly drawing unfavourable inferences from certain facts arising from custom. A Walloon, for instance, seeing women working in the

fields barefooted, is apt to consider it as a proof of extreme destitution. He is, however, in error — it is the custom of the country. A well-to-do farmer's daughters, who are stylishly dressed on Sundays, will work barefooted during the week. The same observation applies to the rye-bread, which the country people eat, as a rule, simply because they have done so for centuries, although they can often afford to eat wheaten bread; which, by the way, is coming into more general use at present.

In my work on the rural economy of Belgium I made some reflections on the indifferent condition of the Flemish peasants, from which inferences adverse to peasant proprietorship have been drawn. These conclusions are erroneous. The evil arises from the fact that there are too few small proprietors and too many small tenants among the peasantry of Flanders.

If you want to find a district in Belgium where the peasants are well off, you must go to Lower Luxembourg. There the land is divided out into a multitude of peasant properties, almost the whole of which are cultivated by the owners themselves. Each of these manages his own farm, and under the shadow of his fruit-trees enjoys in security what he earns by the sweat of his brow. This is a kind of rural opulence, due not to the possession of large capitals, but to the abundance of rural produce. No one is rich enough to live in idleness; none so poor as to suffer from want. The peasant there is also more enlightened than in Flanders, and more independent. The situation is nearly the same as that of the Canton of Grisons, in Switzerland.

A few figures will indicate the contrast between Flanders and Luxembourg; in each of the two provinces I shall select a normal district.

Flanders. District of St. Nicholas, in the Pays de Waes. Farm-labourer's wages, 1 franc 10 centimes per day.

Area of land worked { by owners, 6556 hectares
by tenants, 31,689 hectares

Luxembourg. Bouillon and Paliseul district. Farm-labourer's wages, 2 francs per day.

Area of land worked { by owners, 10,699 hectares
by tenants, 1563 hectares

Thus in Lower Luxembourg the labourer's wages are double what they are in Flanders, although most articles of food, especially meat and potatoes, are cheaper in the former province.

The farmers of Holland lead a comfortable, well-to-do, and cheerful life. They are well housed and excellently clothed. They have chinaware and plate on their sideboards, tons of gold at their notaries', public securities in their safes, and in their stables excellent horses. Their wives are bedecked with splendid corals and gold. They do not work themselves to death. On the ice in winter, at the kermesses in summer, they enjoy themselves with the zest of men whose minds are free from care.

The Belgian farmer, we have shown, is neither as rich as his Dutch neighbour, nor can he enjoy himself in the same way.

One reason is that in Holland the townspeople have at all times invested their savings in public securities, and generally left landed property alone, which has thus remained entirely in the hands of the peasants. In Belgium, on the contrary, the nobility have retained large landed property, and capitalists have eagerly bought estates. Hence a good number of the peasants have become mere tenants.

To meet with the ideal of rural life, you must look for it in Groningen or in Upper Bavaria.

Pliny's saying, *Latifundia perdidere Italiam*, has sounded like a warning voice across centuries. The *latifundia* of the Roman aristocracy first devoured the small estates, then the small proprietors, and, when the Barbarians made their appearance, the empire had become a solitude.

The *estados* of the grandees of Spain have also destroyed the small landowners, whose place has been taken by bandits, smugglers, beggars, and monks.

Tiberius Gracchus was the only Roman who understood the economic situation of his country. Had the laws proposed by him been adopted, the decline of the Republic might perhaps have been prevented.

It is the glory of England to have remained free from the consequences usually attending the large-property system. Great Britain possesses a class of landowners and tenants alive to the

requirements of agriculture; and her gigantic commerce has provided employment for the small freeholders whose lands have been swallowed up. But on the Continent the case is vastly different; and the reason of this is to be found in the facts noticed with reference to Belgium.

Here large farms are, as a rule, not so well cultivated as small ones, and this is easily accounted for. To work a farm of 200 hectares with as much capital as Flemish small farmers do, 100,000 francs (£4,000) would be required. Now, a man who commands such a sum will not become a farmer; he will either go and live in a town, become a functionary, or employ his capital in business; hence the working capital of large farms is, as a rule, insufficient, and therefore the returns from these are smaller, and they let at less rent. Thus an additional stimulus is given to subdivision.

This being the case in Belgium, it must *à fortiori* be so in countries in which husbandry is more behindhand. In eastern Europe — e.g., in Hungary, Poland, and Prussia — large estates are farmed by the proprietors themselves, in the absence of tenants of sufficient capital.

Even in England, would not the land be more carefully cultivated were there a number of peasant proprietors?[1] and, supposing there were 200,000 small farmers more than there are now, might there not be 500,000 fewer paupers less to be supported? I only put the question, not feeling myself competent to decide it.

Free trade in land. I borrow this title from an interesting work published by Mr. W. Fowler, M.P. In our western world it seems to me necessary that there should be no obstacle to land changing hands, in order that it may be distributed in conformity with the laws of political economy, and become the property of those who can turn it to the best account.

To this end, the first requisite is that all those restrictions should be done away with by which landed property is rendered immovable in the possession of certain families; for example, primogeniture, entails, etc. In the second place, every one ought

[1] See the excellent article on the "Channel Islands," by M. Zincke, in the *Fortnightly Review*, January 1, 1876.

to be able to purchase a lot of land without heavy expenses, and with perfect security. If the purchase of an estate involves lawsuits, risks of title, or considerable costs, then the rich only can indulge in the luxury. The continuance anywhere of so intolerable a state of things can only be accounted for by the fact that it is the interest of lawyers and of the wealthy to maintain it; the former for the sake of the legal business it creates, the latter because it keeps the land market to themselves.

As regards the transfer of land and the law of mortgage, Belgium may be considered a model country. The following is a synopsis of the laws in force in this respect:

Since the passing of the act of December 16, 1852, modifying the then existing law, the sale of land takes place by a deed executed before a notary, or else by one under a private seal recognised in law. Deeds under private seal used to give rise to irregularities, and to serious dangers whenever the authenticity of the signature was contested. By the following compulsory forms of law the purchaser obtains perfect security with regard to mortgages. His notary is bound to obtain a certificate (*état négatif*) from the registrar, or keeper (*conservateur*), of mortgages, showing that there are no outstanding charges against either the seller or the former owners. The notary is personally responsible for neglect to take this precaution, and the registrar of mortgages would also be liable to an action for damages were he to omit to give notice of any incumbrances. If there be any incumbrances of this kind, they may be deducted from the selling price, and in that case the purchaser assumes the seller's liability; or else the purchaser may pay off the creditor, who then gives him a discharge of the debt.

The law of 1851 has done away entirely with *hypothèques tacites ou légales*. All unregistered mortgages are invalid against the purchasers of an estate.

Along with the certificate against incumbrances an *état des mutations* must be obtained by the notary; i.e., a statement of all the changes of hands the property has undergone since a fixed date prior to the sale, and establishing the title of the vendor. The notary must, moreover, take the precaution to obtain

an extract from the *matrice cadastrale*, or otherwise a copy of the official survey. Notice is given of every transfer of landed property to the *administrateur du cadastre* by the offices of registration and succession duties, as well as by his own surveyors, who make periodical circuits, and ascertain, *de visu*, what modifications the land has undergone. A good surveyor knows the "parcels" of his district just as well as a shepherd does his sheep.

The notary draws up the deed of sale, which is signed by the parties, two witnesses, and himself. The *minute* or original of the deed is brought to the office of the registrar (*receveur de l'enrégistrement*), who puts an abstract, or summary, of it on his register. By this formality the purchase and its date are fully authenticated; but the primary object of it is to secure the government duty, which amounts to 4 per cent, plus 30 *centimes additionnels*, altogether to 5 francs 20 centimes per cent of the selling price.

After this the deed undergoes *transcription*. It is then no longer the minute that is lodged with the registrar of mortgages, but a duplicate duly executed. The registrar transcribes it in full; this transcription establishes the legal transfer of the property as far as third parties are concerned. Under the Code Civil, transcription was not required to validate a transfer. Under the present law the purchaser who has been the first to have his deed transcribed is the legal proprietor. The transcription is subject to a duty of 1 franc 30 centimes per cent, with some *centimes additionnels*. The notary's fees vary according to the value of the property transferred.

The essential features of the process may be summed up as follows:

1st. A deed of transfer is executed before a public officer (the notary), who is responsible for its proper legal form. The original remains in the notary's hands, and forms the title-deed; and thus individuals are secured against the loss of their title.

2nd. This document is transcribed on a public register, with a statement of the mortgages, if any, on the estate transferred. An extract from this register may be had for a few francs, and thus any one may readily ascertain to whom an estate belongs,

by what right it does so, and what incumbrances, if any, there are on it; and all this without any uncertainty or obscurity.

3rd. The official survey contains a plan of each township (*commune*), with the parcels, their areas, annual values, and peculiarities marked on it; and in every *commune* in the kingdom there is to be found a copy of the plan of its territory, which may be referred to by the inhabitants, and from which they may claim an extract.

In Belgium the transfer duties (which are very high — about seven per cent of the selling price) are levied on the property sold; but this tax is a bad one, impeding free trade in land. In Prussia, where the same legislation exists, the tax amounts to no more than one and a half per cent, and the notary's fees are very low. If the government requires the amount of the tax, it had better impose it on land directly, by increasing the land tax. It falls on the owners of land in either case, but in the latter there would be the compensatory advantages arising from unimpeded sale of their land. In other respects the system is perfect. The *cadastre*, or official survey, ascertains the areas, boundaries, and properties of estates; the notary puts the deed of transfer into its proper legal shape, and the transcription on a public register fixes the date of the transfer and publishes it to the world. There is, in short, absolute authenticity combined with full publicity, being just the two things needful. It is the duty of the State to make these formalities compulsory, a public and not merely a private interest being at stake.

It is of the highest public interest, in the first place, that landed property should easily get into those hands by which it can be turned to the best account; secondly, that the title to property in land should be secure and incontestable; and, thirdly, that there should be no legal obstacles to the subdivision of land when the natural economy tends to it, so that the number of small landowners should not be artificially reduced by imperfection in the law.

The Belgian system is only an improvement on that of the French law, which has been successively adopted by almost all Continental countries, on account of its conspicuous usefulness.

As long as England does not introduce security, publicity, facility of exchange (in fine, *free trade*) into everything connected with property in land, there will ever be an insuperable obstacle to the establishment of an agrarian system in keeping with the wants of modern society. A reform in this particular branch of English law is, in my opinion, the most urgent of all.

We have seen that much larger gross returns are everywhere obtained from the land by small than by large farming. This is certainly a great, but not the greatest, boon accruing from it.

The larger the number of landowners is in a country, the more free and independent citizens there are interested in the maintenance of public order. Property is the essential complement of liberty. Without property man is not truly free. Whatever rights the political constitution may confer upon him, so long as he is a tenant he remains a dependent being. A free man politically, he is socially but a bondsman.

In Belgium most tenant-farmers enjoy both the municipal and parliamentary franchise. But this right, so far from raising them in the social scale, is but a source of mortification and humiliation to them, for they are forced to vote according to the dictate of the landlord, instead of following the dictates of their own inclinations and convictions. How can they feel any attachment to a constitution which, in conferring a new right, really at the same time rivets a new chain on them? The electoral franchise is but a mockery and a snare to the cultivator without either proprietorship or a long lease.

It may be thought a matter for surprise that, in Flanders, feelings hostile to social order nevertheless do not manifest themselves, and that agrarian outrages are never perpetrated as in Ireland, although I think it certain that, in consequence of excessive competitions, the Flemish farmer is much more ground down by his landlord than the Irish tenant. The fact that in Flanders, as in all countries in which landed property is distributed among a large number of owners, the ideas called socialist[1] in the bad

[1] I think it is to be regretted that a disparaging meaning should attach to this word. Are not those who devote themselves to social science, socialists? When, in 1848, Proudhon was asked in the Committee of Inquiry, "What is socialism?"

sense of the word do not obtain influence, is to be accounted for as follows:

The Flemish tenant, although ground down by the constant rise of rents, lives among his equals, peasants like himself who have tenants whom they use just as the large landowner does his. His father, his brother, perhaps the man himself, possesses something like an acre of land, which he lets at as high a rent as he can get. In the public-house peasant proprietors will boast of the high rents they get for their lands, just as they might boast of having sold their pigs or potatoes very dear. Letting at as high a rent as possible comes thus to seem to him to be quite a matter of course, and he never dreams of finding fault with either the landowners as a class or with property in land. His mind is not likely to dwell on the notion of a caste of domineering landlords, of "bloodthirsty tyrants," fattening on the sweat of impoverished tenants, and doing no work themselves; for those who drive the hardest bargains are not the great landowners, but his own fellows. Thus the distribution of a number of small properties among the peasantry forms a kind of rampart and safeguard for the holders of large estates; and peasant property may, without exaggeration, be called the lightning conductor that averts from society dangers which might otherwise lead to violent catastrophes.

The concentration of land in large estates among a small number of families is a sort of provocation of levelling legislative measures. The position of England, so enviable in many respects, seems to me to be in this respect full of danger for the future.[1]

The idea that all men are equal, placed at the head of all modern constitutions, and announced as an axiom throughout the world, is a new idea, the wholesome or baneful effects of which it is as yet impossible to foretell. The gospel proclaimed the equality and fraternity of all men: but it was to Christians a heavenly ideal, which they did not feel called upon to realise in this world. The Reformation, the United States Constitution, and the French

he replied, "A general desire for improvement." "Then we are all of us socialists," remarked the chairman of the committee.

[1] See Mr. Cliffe Leslie's remarkable article on the "Land System of England," in *Fraser's Magazine*, February, 1867.

Revolution made of it a terrestrial ideal, of which the consequences must be logically followed up; it only remains to be seen to what extent these consequences are to be carried.

Tocqueville, in his book on Democracy, has admirably shown the effect of the equalitarian principle in politics; but he has not pointed out with equal clearness the economic consequences it is likely to entail; and these precisely absorb, at the present day, the attention of all those who can see and understand.

The idea that all men have equal rights, though proclaimed everywhere, has not yet taken root enough to become a living and earnest conviction, resolute on action. To the upper strata of society this idea is like a vague threat hanging over them; to the lower ones, like a light of hope in a distant future; but being incessantly repeated at workmen's congresses and meetings, it is likely to diffuse itself through all classes, especially those whose interest it is to believe it to be true.

Now suppose this idea universally and ardently embraced in a country in which the larger part of the land is in few hands, what sentiment is it likely to give birth to among the masses? They will say: "If we are equal, how is it that a caste has perpetual possession of the land, and that we are perpetually doomed to support this caste by the produce of our labour? Has God made the land only that a privileged few shall enjoy it? Property is said to be the creature of labour. How is it, then, that we ever behold idleness and opulence on one side, and labour and destitution on the other? According to the laws of nature, he who works ought to reap the fruits of the earth, whilst he who lives in idleness should suffer hunger; but does the perfection of social laws consist in keeping the drone in abundance and the bees in distress?"

I will not carry the argument further; it will be readily understood. This was precisely the language held by the peasants who revolted in Germany when Luther spoke evangelical equality to the feudal society of the sixteenth century. These ideas may be drowned in blood, as they were on that occasion, as they were in France at the time of the Jacqueries; but they will always revive and redouble the danger to society in countries where inequality appears like an institution conspicuous to the sight of all.

It is a grave symptom of the emergency that the upper classes themselves no longer remain inaccessible to these ideas. A distinguished member of the British Parliament, to whom I pointed out that certain measures proposed for Ireland looked remarkably like "confiscation," replied to me, "No doubt they do; but why should they not? Is it not just that every one should have his turn?" And really, if but a few are chosen to sit down to the feast of life, why should these guests be always the same? This is in its crudity the idea which involuntarily rises in the mind. It is all very well for lawyers and economists to prove its absurdity, but one and the same argument produces a different effect on the man who is seated at table and the man who waits upon him; what may seem absurd to the man who has the good side of the present *régime* may appear perfectly right and proper to him who has come in for the bad side.

Travelling in Andalusia this year (1869), I lighted upon peasants harvesting the crops on the lands of Spanish grandees, which they had shared among themselves. "Why," said they, "should these large estates remain almost uncultivated in the hands of people who have neither created nor improved them, but are ruining them by spending elsewhere the net produce they yield?" I am convinced that were land more divided in those districts of Andalusia, where ideas of communion prevail at the present day, these would no longer find any adherents. In Belgium, socialism, though spreading among the working classes in manufacturing districts, does not penetrate into the country, where the small landowners block up its way.

Therefore I think the following propositions may be laid down as self-evident truths: There are no measures more conservative, or more conducive to the maintenance of order in society, than those which facilitate the acquirement of property in land by those who cultivate it; there are none fraught with more danger for the future than those which concentrate the ownership of the soil in the hands of a small number of families.

THE STATE SMALL-HOLDINGS IN DENMARK

By Sir Rider Haggard

(Reprinted from "Rural Denmark and its Lessons." Longmans, Green, & Co., 1911)

DURING my stay in Copenhagen I was most kindly conducted, as the guest of the Department of Agriculture, on a tour of investigation of the State small-holdings in the neighbourhood of Roskilde. We went by motor, as this was practically the only way to reach them, my companions being Mr. Valloe, Mr. Waage, and Mr. Niels Mortensen, himself a successful small-holder, who is the chairman of the Small-holdings Commission in that district. His Excellency the Minister for Agriculture was coming also, but unfortunately a Council of State prevented him. This I much regret, as I should like to have heard more of his views upon the question generally.

I now propose to give some account of the men I visited, as long experience in this kind of investigation has taught me that the only way to get at the truth as to the prosperity or otherwise of any branch of agriculture anywhere is to examine into it with one's own eyes. Learned treatises and the views of official gentlemen or experts are very well and a great help, but to understand things it is necessary to see the farms or holdings and the actual men who work them.

Before I went to Denmark I was informed in one or two agricultural papers that my visit was unnecessary, as everything about that country is quite well known already. It may be so, but at any rate it was not known to me, who had read everything on the subject upon which I could lay hands. From such reading I gathered, it is true, certain general ideas; for instance, that co-operation was largely practised in Denmark, and

that there were many small-holders in the country where agriculture was strangely prosperous. But in the light of the experience that I gained in the course of my investigations on the spot, I can say honestly that until these were made I understood little of the local conditions. Further, I had no idea of the great lessons that are to be learned from those conditions, which have, as a matter of fact, shown me the answers to problems that I have studied for years without being able to be sure of their solution.

On these grounds, then, I determined that I would not leave the country until I had personally interviewed some of these State small-holders — had seen their land and heard their stories from their own lips. Here I may add that the men I visited on this particular journey, as Mr. Mortensen assured me in answer to my specific questions, were neither the worst nor the best of the State small-holders in that part of Denmark. They were, he said, a fair sample, selected for the most part because their holdings lay near the road and were therefore easy of access.

The first holder whom I saw, a hard, sturdy-looking man of about fifty, was Mr. Ole Larsen of Sallov, by Gadstrup, who owns five töndeland, that is, about six acres and a half, which he bought in 1905 with the aid of a State loan of 4000 kroner (or £221 13s. 4d.), at a cost of 500 kroner (or about £27 10s.) per töndeland — say £25 the acre. He informed me that when he entered on the holding he possessed a capital of 1100 kroner (about £61), which he had saved as an agricultural labourer. Mr. Larsen is a man of standing in his way, being a member of the Parish Council. He has a wife, but no children. He built the house and buildings at a cost of 2400 kroner (£133), I believe largely by his own labour; indeed if it were otherwise, I am sure I do not know how he did it for the money. At the time of my visit he was engaged in putting up an excellent cart-shed with his own hands.

His house was erected under the supervision of the Small-holdings Commission for the Roskilde district, to which all drawings and plans for such dwellings must be submitted. It is thatched, and comprises under one long roof the dwelling-place,

a store-room containing a chaff-cutter, and beyond this the cow-house and pigstye. In the dwelling are two sitting-rooms, a kitchen at the back with a copper and stove, and as this couple have no children, one bedroom. If there were children the second sitting-room would be used as a sleeping chamber.

The cow-house, which is good and suitable, has accommodation for four cows and one horse. In the piggery, that is roofed over, as is usual in Denmark, were a fine sow, ten growing and four young pigs of Danish breed. Here I saw a new thing, a half-grown female pig with two well-developed teats hanging from its throat. I was told that this phenomenon was very rare, but does occasionally occur in the Danish breed, both with male and female animals. It seems that pigs have been known to suckle their young from these false teats.

In addition to these pigs and sixty fowls, Mr. Larsen's stock consisted of four good red Danish cows, three of which stood blanketed in a field. These he said he had bought out of his private means. Also he had a horse, an aged but useful animal, lightly built though sufficiently strong for his land. It cost him 300 kroner (£16 12s. 6d.) The milk goes to a co-operative dairy which stands about half a mile away. In 1909 Mr. Larsen's cows produced 30,000 lb. Danish, which he sold for 1200 kroner (£66 10s.), plus the value of the skim milk which was returned to him. Also in that year he sold pigs to the value of 2600 kroner (£144) and purchased cake and other feeding-stuffs at a cost of 2500 kroner (£138 10s.). He told me that during the previous two years, after paying his interest to the State, there had been "a bit over." As a matter of fact, in 1909 this "bit" amounted to a surplus of 800 kroner (£44 6s. 8d.).

Mr. Mortensen, who heard this statement, added that he also had himself saved money out of a similar holding.

Mr. Larsen said that he looked to his cows, pigs, and poultry for his income, as he sold no corn. The pigs, like the milk, went to a co-operative society, but the eggs he disposed of privately. He buys his artificial manure (superphosphates) and calf-cake through another co-operative society. Among his implements I

saw a waggon that cost 170 kroner (£9 8s. 6d.), a market-cart bought second-hand for 120 kroner (£6 13s.), and a corn-dressing machine, besides a plough, a roller, and two sets of harrows, all designed to be drawn by one horse. He borrowed his liquid-manure apparatus from a neighbour.

I inspected this article, which, in view of the considerable cost of such machines in England (my own came to about £22), deserves a few words of description, especially as all I saw in Denmark were of the same pattern. It consisted of a long coopered tub measuring about 9 feet by 3, which tubs can be purchased for 30 kroner (£1 13s.). This is placed in one of the narrow-bottomed Danish waggons and pumped full of the fluid, which, by means of a simple sluice-door behind, it discharges in a copious stream on the land as the waggon is drawn forward. This stuff is applied much more liberally than our carts are designed to do. Mr. Larsen said that it is best used in spring and autumn and after rain. Even on this small-holding there is a good liquid-manure tank holding 96 cartloads of 140 litres to the load, and fitted with a proper pump.

I went over Mr. Larsen's land very carefully, being anxious to ascertain how it was managed. He called it good and heavy, but I should describe it as light. Indeed it must be light, since otherwise one rather slenderly built horse could not drag a plough through it. Near to the buildings were three small stacks — one of barley, one of barley and oats mixed, and one of oats. Beyond these was first a strip of very good swedes and beet, about an acre in all. Then came another strip from which a mixed crop of barley and oats had been taken. This was sown down for clover hay, and on it the blanketed cows were tethered. Next in succession was plough-land already drilled with rye after oats and vetches, then mustard for cow food after rye, a patch of beet, and a barley stubble. All of these were clean and in good heart. The little farm is divided into eight portions of about three-quarters of an acre each, worked in the following rotation: (1) oats, peas, and vetches mixed for "stable food"; (2) rye; (3) roots; (4) barley; (5) roots; (6) barley sown down with clover and mixed seeds; (7 and 8) clover.

Mr. Larsen and his wife do all the work of the holding without assistance, but he does not undertake any outside labour. He told me that he gets on well and is perfectly satisfied, adding with emphasis that he much preferred his present position to that which he used to occupy as a labourer. Certainly he seemed to be prosperous in a small way; and as we sat down to partake of the lunch of coffee, beer, etc. which Mrs. Larsen had hospitably provided, the air of solid comfort about the place struck me very much. It was a little astonishing also to be warmly thanked by a man in this position for the pleasure that he said he had experienced in reading works of mine that do not deal with agriculture. I do not think that a foreign writer visiting a small-holder in England would be likely to meet with this particular surprise. In Denmark, however, it is otherwise, for there among the peasant class he may find that he is as well or even better known than it is his fortune to be at home. The Danes are great readers of such fiction as appeals to them.

Before I parted from Mr. Larsen I had a private conversation with him on the subject of State small-holders generally. He told me that in his opinion about half of these really succeed. One-third just get on, and the rest are unsuccessful. It was entirely a question of the man himself. If he were the right man in the right place, things would go well. If not, he would fail. He thought that the movement would spread, which he feared would cause the land to become too expensive. Thus he said that in this part of Seeland it used to be possible to buy ground at 500 kroner (£27 14 s.) the töndeland, whereas now it costs 700 kroner (£38 15 s. 10 d.).

Leaving Mr. Larsen's house, we proceeded to another State small-holding near by which belongs to Mr. Anders Andersen. Mr. Andersen was away from home working for somebody else, so we interviewed his wife. She told me that they came into occupation of the holding five years ago. It was bought with the house and implements, but without stock, for 6100 kroner (£338) by aid of a State loan. The former owner was also a small-holder, who could not get on, either because he was not hard-working or sufficiently intelligent. Mr. Andersen first saved a little as a

labourer, then took up some land, and afterwards moved on to this holding, which is larger.

His wife informed me that she liked the place, and that they were getting on fairly well. At the time of our visit, however, she was somewhat depressed, as two of their pigs were ill with cramp, which to them was a very serious matter. Their stock consisted of four cows, a calf, and five pigs; but having no horse they were obliged to hire one for ploughing. She said sadly that they wanted a horse very much indeed, even if it were only an Iceland pony, such as many of these small-holders use. The harvest had been good, and they had three stacks of corn, also a nice piece of roots.

Their house was smaller than Mr. Larsen's, consisting of two rooms, with a granary adjoining that could be turned into dwelling space if necessary. This they did not need at present, as they only had one small boy at home. There was a cow-house for four beasts, and the usual piggery. I asked if the drinking well were not somewhat too near these outbuildings, and was told that it had been cemented. When the same question was put to another small-holder, he replied he had not noticed that the water made the pigs ill!

My general impression was that these people were not quite so flourishing as the Larsens. It appeared, however, that they took over their land in very bad order. Also Mrs. Andersen was evidently much depressed by the sickness amongst her pigs. Still Mr. Mortensen thought that they would get on well, as the man was steady and reliable.

Our next visit was to Mr. H. P. Nielsen of Tjaereby, a middle-aged and capable man with a lame foot, who owns five töndeland, which he bought with the aid of a State loan of 5000 kroner (£277), at a cost of 600 kroner (£33 5 s.) per töndeland inclusive of the standing crops. He began with a private capital of about 1000 kroner (£55 8 s. 4 d.), which he had saved as a labourer and shoemaker, for he combined both callings. The house — a good one — and buildings he erected at a cost of 3500 kroner (about £194). Mr. Nielsen, who is a member of the Parish and other local councils, informed me that he was quite satisfied with his

position, was getting on well, and after three years' experience of his holding looked forward with confidence to the future. His stock consisted of three cows, a calf, a horse, four pigs, two sows, and thirty fowls. All his milk and other produce were sold through co-operative societies.

The buildings on this place are excellent of their sort and very clean, the liquid-manure tank being so arranged as to form a base for the straw stacks. The land, a medium loam, was clean and well cultivated; it bore good crops of roots, including carrots. Also there was a nice garden, and in it were three large hives of bees. Mr. Nielsen had four children, but these were grown up and away. I gathered that he and his wife did all the work of the place, with the result that he now has little time to earn extra money by shoemaking. That on the whole he had no cause to complain was shown by the fact that he has been able to live out of his holding, and in addition to repay debt to the amount of about 300 kroner (£16 12s. 6d.) a year.

Another State small-holder whom I saw was named Anders Frandsen, who lived at a place called Svogerslev Mark. He and his wife were elderly people, and with them resided his mother, an old lady of eighty-five, and a young son, who was sick in bed. By the way, all the family, including the old mother and the boy, slept together in one not very large room! Why they did this I do not know, as the house is the best of those that I visited on this journey, and has very good outbuildings.

Mr. Frandsen borrowed 4300 kroner (£238 5s.) when he bought his property of six töndeland five years previously, but was applying for an additional State loan. He began with three cows, but at the time of my visit had seven cattle, also a sow, four pigs, and two good horses. Originally he was a butcher and stockbreeder, but possessed only a little capital when he entered on his small-holding.

He told me that he was well satisfied, and could earn a living and pay his way, although whatever more he could make went to buy stock and refund debt. He bought and sold everything through co-operative societies, and expressed the opinion, which Mr. Mortensen endorsed, that the small-holding movement in

Denmark would be impossible without the help of such societies. Indeed, Mr. Mortensen added that it would be difficult for Danish agriculture generally to succeed in their absence.

Mr. Frandsen, a very intelligent man, informed me that he thought the State small-holders as a body were getting on fairly well. Still the start was difficult, and it was necessary for a man to possess rather more than the tenth of the capital which the law prescribes. This, I think, from the appearance of the place, must have been his own case. He said, what I could well believe, that if he were to sell out he would find himself considerably in pocket on the whole transaction.

I think that the reader will agree with me that on the whole these examples of Danish State small-holders had a satisfactory tale to tell, especially when Mr. Mortensen's assurance is borne in mind, that they were neither better nor worse than the average of their class. Still I imagine that Mr. Larsen's estimate that about one-half of such people really succeed, while a third only just get on and the remainder fail, is on the whole quite accurate. Indeed, in the circumstances, I do not see how it could be otherwise, since even with the powerful aid of co-operation the fight must be very hard, and one in which only good men can win a decisive victory.

In considering this question, I think we should remember that the part of it which is concerned with public policy, namely, whether such men should have freeholds or leaseholds, must be kept apart from the matter of the actual success or otherwise of those men. At present it can make little financial difference to such people whether they are freeholders or leaseholders with a fixed tenure, since as leaseholders I do not suppose that they would be called on to pay much, if anything, less than they do now under a system by which they purchase a holding in about a hundred years.

Of course there remains the problem of the rise in the price of land, owing to the demand that is thus created. But if a change were made from freehold to leasehold, the land would still have to be found somewhere by government or other public bodies, and therefore, without the aid of an expropriation act, in a

country like Denmark, where it is so limited in extent, would still rise in value. The point for present consideration, therefore, is whether the State small-holder does or does not succeed as an agriculturist. To me the answer seems to be that undoubtedly he does to a very considerable extent.

On one subject, however, I am perfectly clear in my own mind that were it not for the elaborate Danish system of co-operation he would fail miserably. By co-operation he lives and moves and has his being. Also I consider that he ought to possess a good deal more than a tenth of the total capital, for if this were so, his struggle would be much less hard and the proportion of failures would be far fewer. These are points that will have to be kept steadily in view should the establishment of such a class of free-holders, or even of leaseholders, aided by State money, ever come up for practical consideration in Great Britain.

One thing more. The reader of these pages may say with justice that obviously there exists a great body of opinion in Denmark which is altogether adverse to and has not the slightest faith in the State small-holding movement. This is perfectly true. I do not think that I spoke to any large landowner or large farmer — for in Denmark the two are practically identical — who was enthusiastic about this movement, while most of them were distinctly averse to it. Still this unanimity of hostile opinion should be heavily discounted, for the reason that in every country with which I am acquainted, not excluding England, the large farmer looks on the small-holder with strong dislike and quite apart from the question of whether or no his existence is a benefit to the community as a whole. Circumstances into which I will not enter now make it more or less natural that he should do so; or even if this statement is disputed, the fact remains that he does.

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B. TENANCY

TENANCY IN THE UNITED STATES

By George K. Holmes

(From the *Quarterly Journal of Economics*, Vol. X, p. 34, October, 1895)

WHEN the census made it known that less than half of the families in the United States own the dwellings in which they live, the surprise that followed demanded explanations and the causes of the fact. Are the circumstances of a large portion of the tenants such that they do not want to own their dwellings, although able to do so, or does poverty, either absolute or relative to land and building values, prevent them from becoming owners? Here is a country of vast extent, whose population cannot yet be regarded as dense. Outside of cities and towns there is ample area to satisfy the keenest land-hunger; and the prices do not prohibit purchase to any but the poorest people, especially if it is borne in mind that about one-half to two-thirds of the price of the purchase may be represented by a mortgage.

The acre tracts that were sold in Illinois in 1887 brought $32.86 per acre, including buildings and all improvements. In Wisconsin, in 1893, the actual selling price per acre was $22.51. In Minnesota, in 1881, it was $10.03; and the price increased to $13.41 in 1891. The price per acre in Ohio is somewhat higher, and within the period of eleven years, from 1881 to 1891, ranged from $36.70 in 1891 to $47.29 in 1884, some coal deeds being excluded from the latter year. These prices represent actual sales of acre tracts of land, mostly composed of farms, as found recorded in registries of deeds and as summarized in reports of state officers. Doubtless the prices are a little higher than the prices of farm acres, for the reason that suburban acre tracts and some

timber and mineral tracts are included; and these are worth more per acre than farms are worth.

To what extent acres can be bought, without paying higher than ordinary prices, in such small numbers as poor men would be limited to, is somewhat doubtful, outside of suburban places. The average area of a farm seems to have reached the point at which it is economically adapted to our agricultural products and the methods of producing them. In 1870 the average area of a farm was 153 acres; in 1880, 134 acres; in 1890, 137 acres. Without more intensive agriculture and a change in the character of crops, it is doubtful whether there will be any considerable subdivision of farms; and, if this is so, farm and home tenants cannot practically become farm-owners without buying whole farms as they now exist. They would thus have to encounter an average value of $2909, which they would have to meet with an equal amount of cash, or cash and mortgage encumbrance.

With regard to home-ownership, tenants can find areas in any limited size that is wanted, whether in the town or in the suburbs or in the rural regions. The average value of a home occupied by an owner, under encumbrance, in the United States, is $3250; in cities of 8000 to 100,000 population, $3447; in cities of more than 100,000 population, $5555; and in the country outside of cities and towns of 8000 people and over, $2244.

But the poor tenant need not approach values as high as the average one, either for farms or for homes. Of the encumbered homes occupied by owners, 23.31 per cent are worth less than $1000; and, of the farms, 16.47 per cent. Suppose that a tenant were to set out to own a home worth $1000. He would probably be able to acquire ownership by advancing no more than $333, a mortgage for $667 covering the remainder of the purchase price. The average rate of interest on home encumbrance is 6.23 per cent, so that the annual interest would be $42. This is two-thirds of the interest that the landlord of the home would receive at the same rate. Suppose that a tenant of a home of this value were to become its purchaser. He has been paying the landlord $62 yearly for interest; now he pays him $42, and annually invests the difference ($20) at 6 per cent interest. By adding this amount

of $20 annually to the principal, in the course of about twenty-one years the sum of the principal and the interest would be sufficient to pay the debt of $667. This illustration is given to show that home-owning is not the difficult achievement that some may suppose, if the site of the home is immaterial. If a man can save $333, and is able to take $20 out of his annual earnings and invest the amount at interest, it is possible for him to fulfill the conditions of the example. But, of course, a cheap home cannot be had everywhere; and lot values are high enough in cities to limit the choice of the poor, and even of the well-to-do. On the other hand, suburban rapid transit and cheap railroad fares have enlarged the field of choice to suburban regions where lot values are low enough to be within the reach of all but the very poor.

If account is taken of the sales of real estate, its market will seem active to one who thinks that real estate is not easily purchasable for want of purchasing power on the part of the people. The activity of the real-estate market, as shown by conveyances in Massachusetts, has been ascertained for the ten years, 1880 to 1889. The conveyances were mostly by warranty deeds of titles in fee-simple, but some of them were by quitclaim deeds, usually given to remove clouds upon the title to land already in the possession of the grantee. In 1880 there were 37 persons of the entire population, on the average, to each deed made. The highest number of persons was reached in 1885, namely, 39, and the lowest in 1889, 33 persons. Average for the ten years, 36 persons; or one deed annually to about seven families on the average, and one deed during the decade to about seven-tenths of a family. This is for a state that has a denser population per square mile than any other state in the Union except Rhode Island, and denser than any nation in the world except Belgium and the Netherlands. The figures, however, do not indicate whether this activity in purchasing real estate is great among a very small fraction of the population or is pretty well distributed among the masses of the people.

The foregoing are the conditions under which 52.20 per cent of the families of the United States are the tenants of their farms and homes. The farm tenants are 34.08 per cent of the entire

number of farm families; the home tenants, 63.10 per cent of the entire number of home families. In cities and towns of 8000 to 100,000 people the tenants of homes are represented by 64.04 per cent; in cities of 100,000 people and more, by 77.17 per cent; and in the country outside of cities and towns of 8000 people and over, by 56.22 per cent.

The number of occupying owners of farms and homes is nearly large enough to stand for the number of landowners. To make their number complete, there must be added the landowners living in tenant families and the landowners living in the families owning farms and homes, in addition to the owners of these farms and homes. On this account I would not increase the percentage of farm- and home-owners (the percentage of the total families being 47.80) by more than about two. This ought to be enough to account for the landowners who do not own the farms and homes they occupy and who are speculators, old bachelors, widowers, and women whose homes have been broken up and who are boarding in tenant families. It ought to be large enough to include the widowed fathers and mothers living with sons and owning the old farm or home, the brothers and sisters living in the same family and owning land by common inheritance, and other landowners, in addition to those who own the farms and homes which they occupy. If a person owns land, it is a matter of common observation that some or all of it is the site of his home, and that he does not own other land unless he owns the farm or the home that he occupies. The merchant does not own his store and hire his home, nor does the lawyer or physician hire his home if he owns land. It cannot be very wrong, therefore, to regard the landowners of the United States as equal in number to about 50 per cent of the families; that is to say, there is one landowner in every two families, on the average.

The proportion of farm and home tenancy in the United States is made high, not only by the South, where most of the colored people are tenants, but quite as much by New England, New York, New Jersey, and Pennsylvania. The farm and home tenant families are 58.92 per cent of the entire number of families in the Eastern states (North Atlantic) above mentioned; 60.63 per cent in the

Southern States on the Atlantic coast (South Atlantic); 57.89 per cent in the remaining Southern States (South Central); 41.97 per cent in the Western states, including and extending from Ohio westward to and including Kansas, and including all of the states northward of this line (North Central); and tenancy is represented by 45.83 per cent in the Rocky Mountain and Pacific-coast regions.

With respect to farm tenancy the influence of the South upon the average for the United States is very great, because in the South Atlantic States the tenant farmers are 45.84 per cent of the total number of farm families, and in the South Central States 48.27 per cent; while in the North Atlantic States they are 21.45 per cent, in the Rocky Mountain and Pacific states 18.91 per cent, and in the North Central States 26.49 per cent.

The high home tenancy of the South is less influential upon the average for the United States than the farm tenancy of that region is. In the South Atlantic States 73.11 per cent of the total number of home families are tenants; in the South Central States 70.78 per cent. The average in the United States is 63.10 per cent; and this is exceeded in the North Atlantic States, where the percentage is 67.02. If the low degree of home tenancy in the North Central States — namely, 53.66 per cent — were as high as it is in the North Atlantic States, fully two-thirds of the home families would be tenants. The Rocky Mountain and Pacific states have a degree of home tenancy (55.95 per cent) a little higher than that which is found in the North Central States.

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Farm tenancy in Europe is about the same as it is in the United States. In Germany 34.31 per cent of the farms are worked by tenants, and in Holland 39.60 per cent. In several countries the tenancy is less than in the United States — 33.02 per cent in Belgium, 28.94 per cent in France, 31.82 per cent in Norway, 28.17 per cent in Portugal, 17.32 per cent in Sweden. But in Denmark the percentage is as high as 66.09, in Italy 55.19, and in the United Kingdom it must be nearly 100. (These European statistics are taken from Mulhall's "Dictionary of Statistics.")

Thus it appears that in the matter of farm tenancy this country makes no fine comparison with Europe, notwithstanding the fact that we have had land enough to give us all a farm.

Although tenancy has reached a high figure in this land-abounding country, there is yet no concentrated landlordism. There is only one millionaire family that is conspicuous as a landlord, and the large areas owned by individuals and companies are mostly cheap and unimproved land. The possibility of acquiring title to vast tracts of land while the price is cheap has attracted the investments of wealthy foreigners to no great extent; and, beyond one absentee landlord, owning 40,000 acres of farms in Logan and Sangamon counties, Illinois, no important foreign landlord is known to the public. A newspaper writer has made a list of twenty-four citizens and companies of citizens of the United Kingdom who own 17,000,000 acres of land in the South and West. Hardly any of the land is improved or is occupied by tenants, and the prospect that a considerable portion of it will be occupied by tenants is exceedingly remote. All together, it can be worth scarcely more than $50,000,000 to $75,000,000.

Since one-half of the families of the United States are landless, it becomes desirable to know whether the fraction is an increasing one. With respect to farm tenancy, it may be said positively that there has been an increase since 1880. The census of that year found 25.56 per cent of the farms cultivated by tenants. In 1890, 34.08 per cent of the farm families were tenants. The probability is that the percentage for 1880 was reckoned too small. It is supposed that the enumerators neglected to report many tenant farms as separate farms, as in the case of a tenant farm contiguous to another farm cultivated by the owner of the leased farm, both farms at some time previous having constituted one farm under the cultivation of its owner. The tenant farm being cultivated on shares and the crops being stored in the buildings of the farm cultivated by the owner, it was a natural mistake on the part of the owner and enumerator to return the crops as for one farm, thus losing the tenant farm. The mistake might easily happen in the cotton region of the South.

Statistics of farm tenancy were taken in two ways in the census of 1890, one investigation having the farm as a unit, as in 1880, and the other having the family. For the reason above given, and also on account of a large amount of supplementary work, the latter investigation is regarded as the more accurate one; but in a comparison with 1880 the former may be more fairly used. The investigation having the farm as the unit understates the degree of farm tenancy in both censuses; but presumably there is little error in the reported increase of farm tenancy, which was 2.81 in the percentage, or from 25.56 to 28.37 per cent.

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It has been much easier to ascertain that a little over one-half of the families of the United States do not own their dwellings than it is to find adequate explanations of the fact. It is worthy of remembrance that we have been a migratory people, shifting from one occupation to another, and, as people in a new, rapidly developing country are likely to be, somewhat wanting in fixity of purpose and of aim in life. A restless, unsettled people is not to be tied to land. The ownership of a home hinders migration, and civilization has not yet proceeded far enough to do away with migration as a means of bettering one's condition. To the workingman home-owning may even be a positive disadvantage in his dealings with his employer or in the event of better terms offered in another place. Generally, real estate is not readily sold without sacrifice; and, if he owns his home, he will not readily migrate. A workingman may find himself out of employment at any time; and, if he owns his home under mortgage, he may be unable to pay the interest when due, and so lose some of his savings through foreclosure. The absence of permanent local interests, the uncertainties of employment, of new undertakings in trade, and of ventures in a thousand and one directions, forbid men to own their homes.

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When we turn to farm tenancy, it is a clear case of poverty and nothing else; and those who have traveled throughout the United States and seen the circumstances of farm tenants will

agree that it is an absolute more than a relative poverty. The farm tenants of the South, mostly negroes, are in the lowest depths of poverty, although without any extraordinary industry they could become owners of small farms. The Southern farm conditions may be concisely described by the following extract from a paper prepared by the writer:[1]

Before the Civil War the agricultural land of the South was owned and cultivated in large areas by white planters, who were wealthy and independent. Their purchases and sales were made through agents and brokers, whose accounts showed balances in favor of the planters sufficient to meet all purchases made in their behalf and all drafts made by them for cash. When a planter wanted sugar, coffee, clothing for slaves, and other supplies that could not be produced on the plantation, they were bought by the agent and their cost charged against the balance in his hands remaining from sales of cotton or other products.

A devastating and exhausting war, in which nearly all of the able-bodied white men of the South were engaged, made an immediate and radical change in the agricultural system of that region. Large plantations could not be cultivated as of yore for want of equipment, and a subdivision into tenancies was the only course. The ex-slaves were still there, unprovided, as many of their former masters were, with food sufficient to last until the harvesting of the next year's crops.

So it happened that tenant farming largely replaced the old system. Farmers who owned the farm that they cultivated, and landlords alike, had to obtain from merchants the supplies of food, clothing, and farm equipment that were needed, and these on credit, giving in return pledges of the crop to come, out of which the debts must be paid. The tenants, even less prepared to choose, adopted the same system, and lived on their interest in the future crop. . . . Every crop of cotton is mostly consumed before it is harvested; and after the harvest the farmer, owner, or tenant has to place a lien on the next year's crop, often before the seed goes into the ground. . . .

The agricultural land of the cotton states has little sale. Merchants will not accept it as security for debt unless they are compelled to do so, when crop, mules, cattle, and other personal property are insufficient. This is one reason why mortgages on Southern farm land are so few. The blacks prefer a tenancy to selling their labor for wages; and in some regions, at least, the white owners who cultivate their farms find that only the inferior laborers can be hired because the superior ones prefer tenancies. As the planters become independent of merchants they are unfriendly to these tenancies, but, in some instances, have to grant very small ones in order to hold the services of the

[1] *Annals of the American Academy of Political and Social Science*, September, 1893.

blacks, who, under such circumstances, work for wages during a part of the year on the plantation cultivated by their landlord. If the white landlords arrive at independence from debt before the black tenants do, — as it may be assumed that they will, — if either class is to improve, it seems likely that the blacks will see a service for wages encroaching upon the tenant system. . . .

The plantation owners, most of whom are landlords, often live in towns, having abandoned their plantations to irresponsible tenants, who care to work only indifferently and for a bare subsistence of the poorest sort. A tenant whose crop by chance more than suffices to meet his obligations will pick enough cotton to discharge his debts to the landlord and the merchant, and abandon the remainder, knowing that he can live on the next crop until it is harvested. The merchant who has a lien on his share of the crop pays his taxes, buries his wife or child, buys him a mule if he needs one, and feeds and clothes him and his family.

Farm tenants would be laborers on farms or elsewhere if they were not such tenants. As far as they are concerned their tenancy, outside of the South, is a distinct advantage. The requirements of tenancy and of self-directed labor are educational, and the tenant is better off as a tenant than he was or would be as a farm laborer. But as compared with ownership, farm tenancy represents a loss to society. Its agriculture is inferior, and the independence of the owner is poorly replaced by the tenant proprietorship.

Farms are available for tenant proprietorship for various reasons. Some of the older farmers have accumulated sufficient property to enable them to move to towns; and this they desire to do for the purpose of educating children, and also because they, and especially their wives and children, find town life more agreeable than life on a farm, while it may increase their social standing. This has taken place more or less throughout the entire North. In these cases the farmers leave their farms in the hands of their sons, or persons who have been farm laborers, as tenants.

The result of inquiries in some quarters is that the increase of farm tenancy is a reaction from the cultivation of too large farms. The older farmers find that the large farms make too great a demand upon them after sons, grown to manhood, have gone to towns or else possess farms of their own; and if an entire farm is not divided into several tenancies, a portion of it is placed in the possession of a tenant, while the owner continues to work the other portion himself.

It is alleged in some parts of the West that foreclosure of mortgages accounts for the increase of farm tenancy; but this has not been established. It is true, however, that foreclosures on farms in Illinois, Michigan, Minnesota, and New Jersey are from one-third of one per cent to one and one-half per cent of the number of mortgages of farms, every year; and, if these farms upon which mortgages have been foreclosed become and remain tenant farms, the foreclosures are sufficient to account not only for much of the farm tenancy, but also for the entire increase. This is the possibility; it may not be the fact.

Then there is a migration of farmers' sons from farms to towns. Education is spoiling sons for farm life, and they prefer the more genteel, exciting, and social life of the town, even with small earnings. People do not go from town to farm. In the movement of population urbanward, the resulting readjustment that must be made with respect to farm proprietorship gives farm tenancy a place which to a great extent might otherwise be filled by the abandonment of farms. Before farm tenancy will be reduced there must be considerable change in the drift townward, and increase in the profits of agriculture. There is little in prospect that will reduce farm tenancy in this country, unless the immigration of agriculturists should be turned into the South. The economic instincts of the immigrants are superior to those of the negroes and their landlords in the South, and this would make ownership by the cultivators encroach upon the present tenant system.

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There is little reason for believing that the ownership of homes can be promoted to any considerable extent by any scheme. It seems to reach the point which the prospects and distribution of the wealth of the people permit it to reach, whether there are ground rents or not, whether there are building and loan associations or not, and whether there are savings-banks or not. It is a question of land and building values and of prospectively permanent local interests, whether the people own their homes or hire them. This statement, however, is not intended to cover the colored people in the South, most of whom, without great thrift and labor,

could own homes and farms. One or both of these causes — wealth distribution and prospects — have made home tenancy less in the North Central States than elsewhere in the country, and have made a high degree of tenancy in the old East, with its cities and concentrated industries.

TENANCY IN THE NORTH ATLANTIC STATES

By Benjamin H. Hibbard

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THE North Atlantic states, nine in number, consist of the six New England States, together with New York, Pennsylvania, and New Jersey. In area they are but little more than one-fifth as large as the North Central group, while in the acreage of farm land the proportion is below one-fifth, and in improved land but one-seventh. The North Atlantic states have less than one-third as many farms as the North Central states. The East is characterized by a hilly, broken surface and comparatively thin soil, in contrast to the great level or rolling stretches with the deep soil of the Middle West. The difference in topography, and the poorer quality of soil, judged from the standpoint of grain production, help to determine the size of the farm, which in the North Atlantic states averages 96 acres and in the North Central group, 155 acres. During the past decade this difference has increased, the average size of farms of the former group growing smaller by one acre, and that of the latter group larger by 13 acres. At the same time the number of farms in the Eastern group decreased 3.5 per cent, while that in the Middle Western increased 1.4 per cent.

In value the Eastern farms increased during the past ten years 31.9 per cent, the Middle Western, 113.8 per cent. At present the land alone in the North Central states is valued at about the same figure as land and buildings in the North Atlantic states, the values being, respectively, $49.30 and $49.95. In the production of cereals and live stock the Eastern group shows not only a small production but one lessening, as compared to the Middle West. For example, there was a decrease in the wheat acreage of both

sections from 1900 to 1910, but the decrease was relatively four times as great in the North Atlantic states. They are now producing a smaller proportion of the breadstuffs of the nation than ever before. In corn acreage the North Atlantic states show for the past decade a decrease of 12.5 per cent; the North Central states show an increase of 1.1 per cent. The movement in the production of oats is similar. With respect to live stock the North Atlantic states show from decade to decade a continually decreasing proportion of the live stock of the country. For the census years 1900 and 1910, respectively, they reported 9.3 per cent and 9.1 per cent of the cattle, 9.3 per cent and 8.0 per cent of the horses, 6.9 per cent and 4.4 per cent of the sheep, and 3.7 per cent and 3.8 per cent of the swine.

There are, however, some important particulars in which the North Atlantic states rank high. The denser population encourages a more intensive type of agriculture, and in dairying, vegetable growing, and fruit growing this section holds an important place. Distinctively dairy farms are relatively more than five times as prevalent in this section as in the Middle West; vegetable and fruit farms are three times as prevalent; and in addition twice as great a proportion are classed as miscellaneous. Owing to the more intensive types of farming and the more careful adaptation of the crop to the particular soil best fitted to its production, the yields per acre in the East compare very favorably with those of the West.

All the foregoing facts affect the tenancy question. The predominating conditions point to a high percentage of ownership as compared to tenancy. To begin, the value of the land is not, on an average, very high, and in several states it is decidedly low. The percentage of tenancy follows very closely the value of land, tenancy being more prevalent where land is dearer. It is true that exceptions to the rule occur in a few instances in New England; but New England is no larger than the state of Michigan, and with so many cities, and with highly specialized types of agriculture here and there, it is no wonder that local exceptions to the general trend of tenancy should occur. Treating New England as a unit, the rank in value of land and in tenancy for the North Atlantic states correspond exactly, as the following figures show:

VALUE OF LAND AND PER CENT OF TENANCY

	Value per Acre	Per Cent of Tenancy	Rank in Value	Rank in Tenancy
New Jersey	$47.76	24.8	1	1
Pennsylvania	33.80	22.9	2	2
New York	31.97	20.8	3	3
New England	19.27	7.9	4	4

The relation of rate of tenancy to value of land may be illustrated by groups of counties within different states. Dividing the counties of Pennsylvania into three groups, on the basis of land value, it is found that in the group with the highest value 29 per cent of the farms are in the hands of tenants; in the group next below in value the percentage of tenancy is 21; and in that with the lowest value the percentage of tenancy is 16. The same condition prevails in New York, where by the process of dividing the state into three groups of counties on the basis of value of land, the percentages obtained are for the first group 24.5; for the second, 23.9; and for the third, 18.5. It will be noticed that in New York the range in tenancy percentage is narrow, the difference between the first and the second group being especially slight. This is due in large measure to the presence of a great many suburban homes in the vicinity of New York City and along the Hudson River, which are reported as farms, though in many instances not a great deal of agriculture is carried on in connection with them. Their values are, however, high.

In New Jersey the greatest proportion of tenancy is not in the counties with the highest land values. These counties, clustered around New York City and other large cities near by, contain a very great number of suburban homes of the kind just mentioned, and this fact, together with the influence of a considerable amount of specialized agriculture of the type accompanying ownership, has prevented the increase of tenancy.

It is in New England that the lowest proportion of tenancy on any considerable area within the older states of the Union is to be found, and nowhere else is the correspondence of low-priced land and low rate of tenancy more conspicuous. The average value of

farm land in New England is $19.27 per acre, and the per cent of tenancy is 7.9. The variation of this percentage from county to county is not great and does not follow very closely the price of land. The remarkable thing is the relative scarcity of rented farms.

Not only the low value of land but also the smaller number of acres per farm is an important factor in the value of the farm as a unit. This value in the North Central states averages $9172, and in the North Atlantic states, $4805. Thus for the purchase of a farm in the latter section not much over half the money is required that is required in the former.

However important the value per acre of land and the number of acres included in a farm may be in determining the line of cleavage between ownership and tenancy, it is certain that some types of farming lend themselves much more readily to the tenancy system than do others. And while it is not so easy to trace the connection between price of land and tenancy in the East as in the Middle West, on account of the greater number of additional influences affecting the result, it is easier to identify some of these latter forces.

The contrast between the tenant farm of the East and that of the Middle West is striking. In the Middle West it is a little smaller than the owned farm; the buildings are decidedly inferior. In the East the tenant farm is larger by a few acres than is the owned farm, and the buildings are correspondingly more valuable. These striking differences are due to the fact that the greater proportion of tenants in the East as in the Middle West gravitate toward the more extensive type of farming. But in the latter section this means less live stock and therefore fewer barns; the grain farming which the tenant follows requiring relatively few and inexpensive buildings. In the East the same motives and circumstances induce many tenants, in addition to grain growing, to keep a large number of dairy cows, and dairies require good buildings. Therefore the rented farm in the Eastern states has a better, at least a more expensive, set of buildings than has the owned farm. And this is one reason why the rented farm is worth an appreciably higher sum than is the owned farm.

As in the Middle West, so in the East, the tenant raises more

than his proportional share of the cereals, and especially is this true where the acreages are considerable. In New York the tenants grow 50 per cent more than their share of the wheat; in Pennsylvania 75 per cent more; in New Jersey 76 per cent more. Corn and oats are grown in similar, though somewhat smaller, proportions by the tenants, and the same may be said of hay and forage. The important wheat-growing districts of the North Atlantic states comprise about 21 counties in Pennsylvania, 12 in New York, and 8 in New Jersey. These counties for the most part show high land values, yet in neither case are they the highest of the state. The percentages of tenancy, however, are higher than for the highest groups on the basis of value, being 30.6 per cent in Pennsylvania, 27.4 per cent in New Jersey, and 25.2 per cent in New York. With very few exceptions the greatest acreages of other cereals are found in the same counties in which the greatest acreages of wheat are grown; but the farms growing the major part of the wheat are larger than those producing the major part of the other cereals, indicating that the most extensive type of farming practised in this section is in connection with wheat growing. Thus again is emphasized the coincidence of tenancy with farming of an extensive sort.

The best agricultural showing made by the North Atlantic states is in dairy farming, and therefore the relation of this industry to tenancy is of particular interest. It may sound a little strange to call dairying an extensive type of agriculture, but the term is a relative one; and, speaking relatively, dairying as usually carried on in the North Atlantic states may be so designated. It is at least a much more extensive type of agriculture than fruit and vegetable growing, both of which are very prevalent in these states. In the North Central states dairying is carried on mainly by owners, but in contrast to this the tenants of the North Atlantic states have charge of many more than their proportional number of dairy farms. The force of this, however, is not so evident in the number of farms reporting as in the number of dairy cows; of these the tenants reported in 1900 more than 25 per cent in excess of their proportional allotment. The prevalence of tenancy among dairy farmers is further emphasized within the districts where

dairying predominates. In the ten leading dairy counties of New York, the average percentage of tenancy is 21, — the same as for the whole state; but the tenants in these counties report 38 per cent more than their proportional number of cows. The question at once arises how these tenant dairymen accommodate themselves to the short and uncertain tenure by which they hold the farms, since it is not an easy matter to move the dairy equipment from one farm to another without considerable loss in the process of moving and readjusting. The answer is that these tenants do not move as frequently as do other classes of tenants, and (what is not the case in the greater part of the Middle West) when they do move they have a reasonably good chance to find another farm with accommodations for dairying. In many instances the relation of landlord to tenant is much closer in this than in other types of farming, the landlord frequently owning a share in the equipment and paying part of the regular expenses, the arrangement being analogous to a partnership. This higher percentage of tenancy in the dairy business than in general farming is found in all of the states of this group in which dairying is a leading business, but not, for example, to a noticeable degree in Maine and New Hampshire, where large dairies are few.

With regard to live stock other than cows and hogs, the tenant in the North Atlantic states, as in other parts of the country, has less than his proportional share. As in the North Central states, the tenants here raise relatively more hogs than do owners. It is in dairying alone that an important exception in relation to tenancy is apparent. Perhaps a word of caution may not be out of place. A large proportion (probably 75 per cent) of the dairies are in the hands of land-owning farmers; but the general low rate of tenancy in other lines gives the dairy tenant prominence.

More important than in any other part of the United States except the extreme West is the fruit farming of the North Atlantic states, and in this fact lies a considerable part of the explanation of the low rate of tenancy in this section. In the 1900 census about one farm in sixteen in this group was classified as a fruit farm, but this hardly gives an adequate picture of the situation, since a very great deal of fruit must have been produced on other

farms, where it was a very important source of income, even though not the leading one. The tenants are in charge of about four-fifths of their proportional number of distinctively fruit farms, but in quantity of fruit produced they rank much lower. Of small fruits the tenant grows comparatively little, and the same is true, to an even greater degree, of grapes, and hardly less so of peaches and pears. Apples are more generally grown and are found to some extent on almost all farms in the East, thus bringing the proportion grown by the tenant a little above that of the other fruits. Fruit growing and tenant farming are not compatible. The best results in fruit growing demand continuous and consistent plans extending over a period of years, a condition necessarily absent in the usual case of tenancy. Something more than the moderate extension of period of occupancy noted in connection with the dairy tenants would be required to make it feasible for the tenant to become a successful fruit grower. The tenant can leave the ordinary farm in a sufficiently discouraging condition after his own interest in it has ceased, but a fruit farm under such circumstances would suffer vastly greater deterioration. For example, a vineyard left unpruned or a strawberry bed neglected is not likely to be a source of profit during the first year following. Even orchard trees are the objects of constant solicitude where good results are obtained. It is therefore not a matter of surprise to find ownership high and tenancy low in districts where fruit is a leading crop.

It must be remembered, of course, that the price of land in census reports includes the value of all perennial plants growing upon it. Hence these reported values may cover up the fact that land not already planted to fruit, but suitable for such use, may be had at a comparatively low price. In this possibility of buying land, usually in small tracts and at a low price, lies a great part of the explanation of ownership as opposed to tenancy. It is possible under such conditions for a man of small means to acquire ownership. But after developing such a farm he hesitates to lease it to a tenant, well knowing the difficulties and care involved in keeping it in running order. And the tenant on his part is seldom ambitious to undertake the management of such a farm. If he

were, he would more likely start, in a small way, as the owner of a few acres out of which to make a fruit farm of his own.

Good examples of the low proportion of tenancy among fruit growers are found in New Jersey, where tenancy, in spite of a relatively high price of land, is decidedly low, being in some instances under half the average rate for the state. In the state of New York there is some confusion of evidence, since of the ten counties leading in fruit production five lie within and five without the main grain-growing district. For those within this district the low rate of tenancy for fruit farms is covered up by the high rate for the grain-producing farms,— very thoroughly covered on account of the greater number of farms of the latter type. In the five fruit-growing counties outside the grain district the percentage of tenancy is in every instance well below the general average for the state. In the other states of the group the fruit-growing areas are not sufficiently separate from the general-farming areas to admit of separate analysis based on the general statistics. Within these states, however, the proportion of fruit grown by tenants is, as elsewhere, low.

Another special type of farming of much importance in the North Atlantic states is that of growing vegetables. Unlike fruit farming, much of this is in the hands of tenants. In the first place, many such farms are in the vicinity of cities, on land high in price, often high because of possible uses other than agricultural. Land used for growing vegetables must be so thoroughly tilled that the danger of deterioration is small. The frequent moving of tenants on and off farms of this character is not so serious a drawback as it is in many other instances. The buildings are of a simple character, and not unusually great in value. The crops are almost without exception annuals. The equipment needed for running the farm is not elaborate. Under these conditions the tenant may even come and go within the year, raise a good crop, and yet suffer but the minimum loss due to the difficulties of moving and adjusting himself to a new environment. Of the number of farms in 1900 on which vegetables were the main source of income the tenants held about 14 per cent more than their proportional share. Yet, as in the case of fruit, the proportion of vegetables

produced by tenants for the market is still higher. For example, they grow about 25 per cent more than their proportion of potatoes, and almost double their proportion of sweet potatoes. Tomatoes and melons are likewise favorite crops among tenants, and in certain districts especially adapted to their growth, as southwestern New Jersey, about half of the total crop is grown by tenants. In making a considerable number of tests on this subject not an exception was found; the vegetable-growing business seems to be especially adapted to tenant farming.

Since 1880, the date when tenancy statistics were first gathered, the percentage of tenancy for the North Atlantic states has been low in comparison with that for the whole country — in fact, lower than for any other group except the extreme West. In the Western division conditions may properly be considered abnormal on account of the presence of many newly developed farms, and especially because so many of these have been taken recently from the public domain. In the North Atlantic states, however, the term "abnormal" hardly applies, since farm land was long ago brought into use, and the readjustments which have been in progress are no greater than may be expected at any time. Especially is this true in view of the fact that the free land of the West was pretty well gone by the year 1880. For twenty years following 1880 the proportion of tenancy not only increased, but the increase was shared by every one of the five geographical divisions and by almost every state. In New England the proportion of tenancy has been low throughout, but in 1900 it could be said that there had been an important increase during each of the preceding two decades. In the North Atlantic group during that time about one farm in twenty had been taken from the category of ownership and added to that of tenancy. The portents were ominous. It was freely predicted that the fifth act of the play would represent the farmer divorced from his land. True a very few states, three New England states, for example, had shown for one or both of the decades preceding a slight tendency downward in the rate of tenancy, but only one of them had a smaller proportion than at the beginning of the period, and that an unimportant amount. Now, at the end of another ten years,

every one of the nine states of the North Atlantic division shows a positive, though not great, gain in ownership, and corresponding decline in tenancy. Nearly three farms in every hundred passed over from the one class to the other. This amounts to a decrease of 16 per cent in the number of farms operated by tenants, in the face of an increase of 16 per cent in the number so operated for the country as a whole. In 1900 the rate of tenancy in the North Atlantic states was nearly 60 per cent of that for the United States; now it is less than 50 per cent. It cannot be an accident that has brought about such a striking change in the tenancy aspect of the Eastern states, including as a matter of fact, in addition to the North Atlantic group, four more states immediately to the south. Neither is this decline in tenancy a symptom of declining agriculture; for these states, notwithstanding a falling off in certain particulars, all things counted, make a good showing.

The low proportion of tenancy in the North Atlantic states is the result of a combination of causes. The most important of these are, first, the low price of land per acre; second, a set of circumstances resulting in comparatively small farms, these two facts combining to give a low value to the farm as a unit; third, the relatively small amount of farming such as lends itself easily to a system of tenancy, and in its stead a type requiring ownership of the land in order to insure good results. That there are other factors involved cannot be doubted; but these statistics seem to indicate which are the decisive factors.

PER CENT OF TENANCY, 1880–1910

	1910	1900	1890	1880
North Atlantic States	18.1	20.8	18.4	16.0
Maine	4.3	4.7	5.4	4.3
New Hampshire	6.9	7.5	8.0	8.1
Vermont	12.3	14.6	14.6	13.4
Massachusetts	8.1	9.6	9.3	8.2
Rhode Island	18.0	20.1	18.7	19.9
Connecticut	9.8	12.9	11.5	10.2
New York	20.8	23.9	20.2	16.5
New Jersey	24.8	29.9	27.2	24.6
Pennsylvania	22.9	26.0	23.3	21.2

TENANCY IN THE NORTH CENTRAL STATES

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FROM the standpoint of tenancy the United States is far too large and too varied to be treated as a unit. Any one of the recognized geographical divisions is so large and varied that even a statistical treatment of tenancy for one section is sure to leave out of account many local and minor influences which, taken together, may be of primary importance. It would be irrational to speak of tenancy in the abstract and include within the scope of the term the twenty-acre cotton farm of Georgia and the thousand-acre farm of North Dakota. In the former case the tenant is usually under the eye and the domination of the owner of the land; is in debt for equipment and dependent for subsistence; is in charge of one thousand dollars' worth of property; and is himself the owner of but one or two hundred dollars' worth. In the latter case the tenant is frequently as independent as the owner of the land; selects his crops to be planted; plans his field operations; owns his live stock and implements, free from incumbrance; buys and sells entirely at will; owns property worth from one to several thousand dollars; and is in charge of a farm worth perhaps twenty-five thousand dollars. Such is the contrast from north to south. Though the contrast from east to west is less pronounced, it is by no means negligible. In the East the farm is small by comparison; it no longer responds to cultivation alone — is not so well adapted to the use of draft animals and even less to the use of mechanical power; diversified farming, or highly specialized intensive farming, is the only type which can succeed. In the Far West there is a great expanse of country and the greatest diversity of soil and climate; a range of crops from the durum wheat and alfalfa of the plains

to the irrigated gardens of the valleys. There is land worn out from the standpoint of present methods of farming, and land so rich that those farming it believe it will last forever. There are farms (so-called) of a quarter of a million acres, worth a dollar an acre; and farms of three acres worth three thousand dollars an acre. Moreover, in the Western country many farms are just being taken from the government in the form of homestead, Carey Act entries, desert claims, and the like; great numbers are being sold on every conceivable plan of coöperative development and deferred payment, these latter being orchard enterprises as a rule. It is apparent that these conditions are not comparable either with the South, the East, or the Middle West. It is no less apparent that the different units here are not comparable one with another. The conditions are so unstable and uncertain that it is difficult to describe the present situation, let alone discover the trend events are taking. It may, however, be noted by way of further introduction that there is a comparatively low percentage of tenancy in the East and in the Far West; the highest percentage in the South; and, in the North, a high percentage in the Middle West, or, in terms of the census, the North Central division of states.

The North Central division is a large block of country. It comprises twelve states, the smallest being Indiana, the largest, Minnesota. Taken together, they have an area of over three-quarters of a million square miles, or 22 per cent of the area of continental United States. They have a population of almost thirty millions, or about a third of the total. From the agricultural point of view this section has striking features. Here are over one-third of all the farms and farm land of the country, valued at more than the remaining two-thirds. In connection with these farms are found nearly half of the cattle, 45 per cent of the horses, and, in value, almost half of the agricultural implements and machinery. Within this section there is grown two-thirds of the wheat crop of the whole country. Also seven-tenths of the corn crop, eight-tenths of the oats crop, and six-tenths of the hay and forage crop are grown in this division. In short, the great bulk of the breadstuffs and the meat, and no inconsiderable part of the dairy products and the fruit, come from these states.

The North Central division is often spoken of as a section uniform in character and quality; but such is far from the case. For example, the price of land in Illinois is reported at $94.90 per acre, and in North Dakota at $25.70, the other ten states ranging between these extremes. Even within a state there are great variations. For example, in Illinois and Iowa there is much land selling for more than $200 an acre, while at the same time a whole county in Illinois is reported at $17 per acre for land and buildings. Nebraska has land selling for $150 in the eastern part of the state, while in the western part there are abundant examples of the economist's no-rent land. Moreover, both in Ohio and in North Dakota there is land which has not been farmed at all. The topography, the nature of the soil, and the length of time it has been cultivated all help to determine the size of the farm, which in Ohio averages 89 acres, and in North Dakota 382 acres. The density of population is correspondingly unlike, ranging from 117 per square mile in Ohio down to 7.6 in South Dakota, while in parts of Ohio the density is several times the average for the state, and in South Dakota it falls below 1 per square mile for some counties.

There is great diversity in the character of the soil and its primary condition. The greatest prairies of North America were in these states, and some of the best of the pine forests and extensive hardwood forests. The swamps are great in extent in the northern part, though irrigation is essential to good crops in the western part. As a result the character of the farming varies very greatly. Certain states may be characterized by the leading type of agriculture within them. Ohio has long been known as a sheep-growing state, Illinois as a cereal-producing state, Wisconsin as a dairy state, Iowa as a cattle- and swine-producing state. Minnesota and the two Dakotas are known far and wide as the producers of wheat, barley, and flax; Michigan is noted for fruit and sugar-beets; and so through the list. It is not necessary, however, to go from one state to another to find changing conditions. There is much dissimilarity within any given state, and consequent variety in the agriculture. In Wisconsin, for example, there is the regular grain-growing, — corn, oats, and barley; there are cattle

for beef and for the dairy, there are sheep and swine; but in addition to these more ordinary kinds of farming, we find the tobacco farms, truck farms, and the so-called "clover-seed" farms, besides lands still to be made into farms. In Illinois the crop range is a wide one. Some parts of the state grow as much corn per square mile as is grown anywhere; some counties are outside the main corn belt. In parts of the state clover and timothy are found on almost every farm; in other parts these crops are almost unknown.

With all these conditions varying so widely, it would be strange were tenancy a constant factor, and it is not. Indeed, it would hardly be possible for it to run through a wider range, since it now varies by individual counties from less than 1 per cent of all farms in some to 83 per cent in others. Over two-fifths of all land of the United States rented to tenant farmers is found in this group of twelve states, and these farms have a value greater than that of the other three-fifths of such farms.

VALUE OF LAND AND PER CENT OF TENANCY

	Value per Acre	Per Cent of Tenancy	Rank in Value	Rank in Tenancy
Illinois	$94.90	41.4	1	1
Iowa	83.00	37.8	2	3
Indiana	62.00	30.0	3	5
Ohio	53.30	28.4	4	7
Wisconsin	43.30	13.9	5	12
Nebraska	41.84	38.2	6	2
Missouri	41.76	29.9	7	6
Minnesota	37.00	21.0	8	9
Kansas	35.50	36.8	9	4
South Dakota	34.70	24.6	10	8
Michigan	32.00	16.0	11	10
North Dakota	25.70	14.3	12	11

The first fact to be noticed is the close parallelism between the value of land and the proportion of tenancy. The above table shows the value of land per acre, and the per cent of tenancy, as reported in the Thirteenth Census, together with the rank in each.

It will be seen that the ranks in value and in tenancy correspond closely in about two-thirds of the states and differ materially in the other instances. Must it be inferred, then, that the case is a mere coincidence? Before dismissing it as such, let us drop three states from the list and re-rank the remaining nine. Dropping Wisconsin, Kansas, and Nebraska, the result is that, in value and tenancy respectively, the ranking is as follows:

RANK IN VALUE AND IN TENANCY, SELECTED STATES

	Rank in Value	Rank in Tenancy
Illinois	1	1
Iowa	2	2
Indiana	3	3
Ohio	4	5
Missouri	5	4
Minnesota	6	7
South Dakota	7	6
Michigan	8	8
North Dakota	9	9

Surely, if this be a mere coincidence, it is a very striking one. But why drop Wisconsin, Kansas, and Nebraska? In partial answer it may be said that Wisconsin has always been remarkably low in tenancy, from causes which will be discussed later, and that Kansas and Nebraska have come up rapidly in tenancy, due to the unusual adaptability of their lands to extensive farming, and to the further fact that in them no considerable amount of available unoccupied land is left, to be taken by home-seekers, and so for a time balance the tendency toward the purchase of land for speculation. Land held for speculation is always for rent, and the time has arrived in these states when tenants are plentiful enough to take the most of it. On the other hand, much land in Minnesota and the Dakotas goes begging for occupants; it must be worked by its owner or not at all, hence a very low rate of tenancy in the newer sections of these states, which holds the general average of tenancy down, in spite of a high rate in the older sections where speculators and tenants are both plentiful.

It is in the older states that conditions are more uniform and apparently more stable, and it is in these states that values and tenancy seem unmistakably to be traveling the same road, and at a somewhat similar rate of speed.

The trend of tenancy for the group during the past thirty years is shown in the table:

PER CENT OF TENANCY, 1880–1910

	1910	1900	1890	1880
Illinois	41.4	39.3	34.0	31.4
Iowa	37.8	34.9	28.1	23.8
Indiana	30.0	28.6	25.4	23.7
Ohio	28.4	27.5	22.9	19.3
Wisconsin	13.9	13.5	11.4	9.1
Nebraska	38.2	36.9	24.7	18.0
Missouri	29.9	30.5	26.8	27.3
Minnesota	21.0	17.3	12.9	9.2
Kansas	36.8	35.2	28.2	16.3
South Dakota	24.6	21.8	13.2	3.9
Michigan	16.0	15.9	14.0	10.0
North Dakota	14.3	8.5	6.9	3.9

Throughout this period the relation between value of land and the rate of tenancy has been substantially as shown for 1910 above. It will be noticed that the slight decline in tenancy for Missouri during the past ten years is the only instance of the kind occurring in the group during the thirty years.

The close relationship between value of land and rate of tenancy is even more strikingly brought out by a comparison of groups of counties within a state than in the comparison of one state with another. Within the state of Illinois, in a block of fourteen counties where farms are reported at $150 or more per acre, there was ten years ago 50.6 per cent of tenancy. In these counties at the present census there is 54.7 per cent of tenancy. Not only is the amount of tenancy high, but it is increasing rapidly, more rapidly than in other parts of the state. In another block of nineteen counties, in which the value of farms is less than $50 per acre, in 1900 there was 27.8 per cent of tenancy,

while now there is 29.7 per cent. This is but about two-thirds the proportion of tenancy for the whole state, and the rate of increase is below that for the state. The same general conditions prevail in Ohio, which we may view from a little different standpoint, so as to include all farms of the state. It is found that in thirty counties in the eastern and southern parts, having an average valuation for farms of $60, or less, per acre, the per cent of tenancy ten years ago was 19.5; at present it is 20.8; not a great change for the period, and a low proportion in each case. In the remaining two-thirds of the state the per cent of tenancy in 1900 was 30.9, while in 1910 it was 33 per cent. It is just here, roughly the middle of Ohio from north to south, that we find the pronounced break in the tendency of farms to slip out of the hands of the owners and into the possession of tenants, for from this line to the east tenancy declines, while to the west, at least to the Rocky Mountains, ownership declines.

The same relationship between values and tenancy may be seen in Missouri, where in sixteen counties in the northwestern part of the state with values of $60 and over per acre there is 33.5 per cent of tenancy. This is well above the general average for the state and is slightly above the per cent for the same counties ten years ago. In the northeastern part of the state a like number of counties with values below $60 stood at 27 per cent in tenancy in 1900, but fell to 24.6 per cent by 1910. In Indiana the nineteen counties in which farms are worth, per acre, $100 and up have 36 per cent of tenancy. The twenty-five counties with values at $50 and below have 21 per cent of tenancy. These groups happen to be, respectively, about equally above and below the average values and average tenancy for the whole state.

More examples might be given, but so far as the writer has made the test, the general relationship holds within each state. That it will hold where other conditions are equal seems to be beyond controversy. It does not always hold good from one state to another nor even within a given state, because of varying conditions; yet the exceptions are comparatively infrequent.

Not only has tenancy either decreased, or increased at a relatively slower rate, in all parts of the North Central states where

the price of land is below the average, but the actual number of tenants has in many instances decreased. That is to say, some farms which had been worked by tenants have passed into the hands of owners, though in more cases, as in such pioneer sections as southwestern Kansas, the lower proportion of tenancy is due, not to this movement but to the development of new farms operated by owners, the tenant farms holding their own in numbers or even increasing. Or the tenants may have decreased, but not so fast as the owners, such being the case in the high-priced sections of Illinois and in half or more of Iowa. This of course means a decided increase in the size of farms. In the thirty counties of Ohio having farms under $60 per acre on an average, there was a decrease of more than 1800 in the number of tenant farms, while in the rest of the state there was an increase in this class of over 2900. In both cases the number of landowning farmers decreased, giving as a net result a number of farms for the state smaller by about 5300 than ten years ago. As a matter of fact the farms increased in size in all states of this group except South Dakota, but the increases were far from uniform over the states. In those districts in which the system of farming seems to be undergoing little change, an increase in the proportion of tenancy seems as a rule to be associated with an increase in the size of the farm. A gain in ownership, on the other hand, is associated with a change in the opposite direction or with absence of change. This does not hold good in districts where, for example, great wheat farms are being broken up into smaller ones, for here the first result is an increase in tenancy.

Values of land and size of holdings are by no means the only factors in the tenancy problem. Among others it may be mentioned that the character of the farming done is not the same in the case of the tenant and the landowning farmer. In this North Central group of states, according to the census of 1900, the tenants had charge of more than their proportional number of farms on which hay and grain were the principal products. On the other hand, they had little more than half their proportion of the live-stock farms. These two classes of farms comprise

the greater part of all farms in this section; hence, in the proportional distribution of these farms between owners and tenants is seen the leading characteristics of tenant and landowning farmers, so far as the general type of agriculture is concerned. The tenant raises grain to sell; the landowner more often raises it to feed to live stock. The tenant produces but three-fourths of his proportional share of hay and forage, and this corresponds almost exactly to the proportion of the cattle which he owns. In the ownership of sheep he is even farther behind the landowning farmer. Yet in the case of swine he has his full quota, and here is an exception to the generalization that the tenant raises grain to sell; though he does this to a great degree, he feeds a great many hogs.

The leading cereals of the North Central states are corn and wheat, together constituting about four-fifths the value of all cereals. The tenants grow only two-thirds of their share of the wheat, yet they exceed by one-third their proportional share of the corn. In the case of wheat the conditions vary widely from state to state. In several of the distinctively wheat-growing states the tenants are growing more than their proportional share, leaving them with much less in the other states. With corn the conditions are more uniform, the tenant raising throughout proportionally more than the landowner. The less usual crops, such as vegetables, fruit, and tobacco, are grown mainly by the landowning farmer. Couple with these facts of tenancy — the prevalence of grain-growing in general and of corn-growing in particular, and the scarcity of cattle and sheep — the characteristics of the tenant farm itself. There is the same value in land per acre, and not far from the same number of acres, but the buildings are worth but five-sixths as much as on the farm occupied by its owner. In implements and machinery the tenant has a little less than his proportional share; though this is due in the main to the fact that he is less in need of such things as haying tools, corn binders, or milk separators than is the landowner. Tenants are seldom handicapped by lack of implements. The tenant farmer himself is much younger than the owner; he stays on the same farm not to exceed about a third as long a

period of time as does the owner. These facts are all significant. They picture a farmer with a poor outfit of buildings, with comparatively little grass land, with little live stock, giving his attention to the growing of grain to be hauled immediately to market. The one exception to this condition is the feeding of much of his corn to hogs.

If these conditions are accurately outlined they present a reason other than the high price of land for the concentration of tenancy on the better land. The tenant is not equipped for doing the more exacting work of stock farming. He lacks the capital with which to begin. He wishes to engage in a business which will yield returns during the year, not after a period of years. Again, he is not encouraged by his landlord to go into live stock to any extent; the landlord is not anxious to put a great deal of money into the necessary barns, silos, and fences. Even should he have the opportunity to raise stock on a given farm, the probability that he will be obliged to move within a short time is a discouragement against doing so, since the next farm he takes will in all likelihood not be so well equipped. In one respect landlord and tenant seem to be agreed, — they want prompt returns on the outlay. These conditions cause the tenant to gravitate toward the section where the type of farming for which he is fitted, and which meets his needs, can best be done. This means a district adapted to the growing of grain, especially corn.

That tenants are prevalent in the heart of the grain-growing section may be seen from the map published in the Thirteenth Census, Vol. V, pp. 98–99. The striking similarity of a tenancy map and a cotton-area map for the South has often been noted. The relation of the corn belt to the density of tenancy in the North has not attracted so much attention. . . .

It is not intended to suggest that there is any magical connection between tenancy and the growing of corn. The connection is very much unlike the relation of tenancy to cotton growing. It would seem to be due more to the failure, perhaps the inability, of the tenant to enter the more profitable business of stock raising than to any other cause. True, in some cases the landlord requires the tenant to grow corn and deliver it to him at market

price, in order that he may have a supply for feeding stock, and also in order to keep his land in better condition than it would be with small-grain growing; but these cases are surely not very common. The tenant is the type of farmer to prefer the extensive to the intensive system of farming. In the northwestern part of this section, where corn has not proved a profitable crop, and yet where land has advanced rapidly in price, the tenant farmer is a wheat grower. This may be seen on the map if the wheat section of the Red River valley be kept in mind, for over a considerable portion of this valley the tenancy shading is noticeably dark. These are the two sections, the corn and the wheat areas blending into each other, in which a simple exploitative system of farming is possible. Here tenancy is not only high, but is on the increase at a rapid rate. Around the outside of this great area there is not the opportunity to plant and reap on a wholesale plan.

There is a great difference between the eastern and southern parts of Ohio and the rest of the state in respect to soil and topography, and the line of the division shows plainly on the tenancy map. In the southern and eastern portion, with its hilly land, wheat and corn are not grown in great quantities. It is here that sheep raising and dairying are common, neither of which businesses predominates amongst tenants. These businesses are not adapted to the ability of the tenant; the soil is not adapted to the crops which he prefers. It seems that a diversified type of farming is all but inevitable in a district of this kind. Again, this is not the land to rise in price as does the richer and smoother land, and so does not get beyond the reach of the farmer in price per acre. The advantage of the large holding is less than in the case of land adapted to the growing of grain, thus contributing another factor toward keeping the value of the farm unit from rising too high for the farmer of moderate fortune. In Michigan, where tenancy is low, farming is diversified. Fruit growing is prevalent, in some counties great quantities of potatoes are raised; dairying and sheep raising predominate in others. All of these facts apply to Wisconsin, which among the older states has a lower rate of tenancy than any other in the Middle West. Wisconsin

is preëminent in the dairy business, but ranks comparatively low in grain. Unquestionably there are other factors than those here discussed which must receive attention in a treatise on tenancy. Among these is the matter of nationality of the farmer, — and the affinity for land of the Germans and Norwegians, so numerous in Wisconsin, is proverbial.

Passing to Minnesota, the chances for long furrows and a smaller variety of operations for a given farm increase greatly. And immediately tenancy is more frequently found. In a few of the choicest counties 45 per cent and over of the farmers are tenants. Why, it may be asked, since wheat farming is of the extensive sort even more than corn, does not the same amount of tenancy develop in connection with it? The answer is not difficult. Up to the present time wheat has been a pioneer crop. It has been raised for a comparatively few years, ten, twenty, or thirty, after which it fails to yield as well as before, and is followed by a more diversified system of agriculture. During the wheat régime the value of the land is low. There is other land not very different which can be homesteaded, or bought at government price, or on long time from a railroad company. While these conditions obtain, there are indeed always a great many speculators, non-resident landholders, who would be glad to let their land on almost any terms. But the farmer can buy for himself, and does, but no one can be found to take the speculator's land.

Ten years ago there was very little tenancy in North Dakota. At present there is a great deal in the eastern part of the state, but the western half is a poor place to hold land with the expectation of lively competition for it on the part of tenants. The same is true to a much smaller degree of western Nebraska and Kansas. These states, with land lower in price than that of Iowa, have about the same proportion of tenancy. Here again is the contrast between the more and the less diversified farming. It is not certain diversified agriculture cannot develop in these states, as in those to the east of them; but it is certain that for the present they lend themselves more readily to exploitation under a one-crop or two-crop system. Here, especially, the tenant keeps few

cattle or sheep, produces far less than his proportional part of the hay, but gives his attention primarily to producing corn and hogs. Everything is favorable for a high rate of tenancy. The land is too dear in price for the poor man's pocketbook. It is level, uniform, and easy to till. Moreover, it is held in large tracts, making it easy for the tenant to get in one block all he can cultivate. Under the system of farming here practised these large units are more efficient than smaller ones, but the great size is in itself a factor, in addition to the high price per acre, precluding ownership by a man of small means. In these states, as in the others previously noticed, high prices of land and high tenancy go together, and low prices and low tenancy together. In Kansas, where the land values are fairly uniform over a considerable part of the state, tenancy shows a similar uniformity. In Nebraska, where the range of prices is much greater, there are many more counties in each of the extreme groups, all of the conditions of high tenancy being present in the eastern part of the state and the low values excluding it from the western part.

Turning to Missouri the conditions are essentially different. The whole south central part of the state is broken and hilly. Thus it is quite well adapted to fruit growing and diversified farming, but poorly adapted to the cultivation of the cereals on a large scale. Hence tenancy here corresponds to that of Wisconsin, Michigan, or eastern Ohio, in contrast to that of the leading grain-growing districts. This land is still largely undeveloped, is low in price, and is therefore in great measure either occupied by its owner or not at all. Southern Illinois and Indiana are likewise not so well adapted to grain farming. Here again, with the smaller farms, and the still smaller fields, combined with low prices of land, the conditions are favorable for ownership, which is, as previously stated, relatively high.

From two different standpoints, then, the same facts are discovered. High price of land and high rate of tenancy go hand in hand, likewise low price of land and low rate of tenancy. Yet it does not follow that the one condition is the sole cause of the other. The American farmer has been slow to adopt a diversified system of farming. Labor has been the scarce factor, and therefore

the dear one. The great desideratum has been a system which required the minimum amount of labor, and since land has been the plentiful agent, it has been exploited as though it would continue to yield crops gratuitously for all time. With the growth of population and the consequent demands for more foodstuff the value of land has followed the rise in the prices of its product. But the land which responds best to immediate demands rises most. As a result the fertile land capable of producing good crops without the use of high-priced fertilizers, or great outlay for drainage, rises first and highest. And while this movement is in progress there is a process of natural selection by which the less efficient farmers are shifted to the cheaper land of the outlying districts; or if they remain, they, or more likely their sons, are within their own neighborhoods relegated to the class of tenants. Speculation is still prevalent in the sections of high-priced land, and is a great factor in keeping the price so high that ordinary commercial returns cannot be made on the investment except by men and methods above the average. This is in itself one of the primary causes of tenancy. Such a sifting and shifting does not take place in the sections where land is less well adapted to exploitation and less attractive to speculators; hence the less efficient may retain ownership. At the same time the type of farming adapted to these sections favors the efficient.

These conclusions are borne out by the fact that within the districts of high-priced land the farmers practising the intensive methods or the rational method of diversification are those who in great measure own the land they till. In the parts of Iowa, for example, where dairying is most prevalent, even though the price of land is high, tenancy is relatively low. The same is true of the intensive farming, such as truck and fruit growing. It can be done, and is done, on high-priced land without the aid of a separate landlord class. Hence the conclusion seems inevitable that the system of farming is a factor equally important, if not more important, than the price of land in turning the scale in favor of ownership or in favor of tenancy. Those who engage in what is called the mining type of farming are losing their hold on the soil. Those engaged in a more profitable type are retaining it to a much greater

degree. Whatever forces raise the value of land make greater demands on the farmer who aspires to its ownership. Whatever increases the efficiency of the farmer makes ownership more probable. The extensive pioneer methods of farming succumb in the fact of great waves of rising prices.

TENANCY IN THE SOUTHERN STATES

By Benjamin H. Hibbard

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TO THE south of Mason and Dixon's line are sixteen states which constitute that portion of the Union familiarly referred to as the South. Here are, then, one-third of the states of the country. In area these states fall a little short of a third of the total area, and also a little short of a third of the area of improved land. But in the number of farms the proportion is high, being 49 per cent of the total number of farms of the United States. This means that the average size of farms in the South is much smaller than in the North. Before the war the reverse of this was true, but at the present time the average size of the Southern farm is 114 acres, while the average of the Northern farm is 143 acres. During the past decade the average size of farms in the North has increased 10 acres, while in the South it has decreased 24 acres. This decrease is the result of cutting plantations up into smaller farms, which in a very great many cases means tenant farms. A similar movement towards smaller farms in Texas and Oklahoma does not mean so frequently an increase in tenancy, since a considerable immigration from other states brings in a large number of landowning farmers.

The value of the Southern farm with its equipment is well below the average for the country, due partly to its smaller size, but also to the lower value of land per acre, the lower value of buildings, and the smaller equipment in the form of machinery and live stock. For example, the average value of land in the South is about $30 per acre in about two states, while in five states it is below $15 per acre. In the North Central states, in which is the greatest body of farm land in the country, we find in contrast but one state in which the average value is below $30, while the upper

limit is almost $95 for Illinois. The average for the South is $16.72, for the North $46.26. In buildings the contrast is still greater, the average value of buildings for each acre being in the North $10.93, in the South $4.03. In implements and machinery the North has an investment per acre two and one-half times as great as has the South; in live stock, an investment about twice as great. All told, a Northern farm with its equipment is valued at $9500; a Southern farm at $2900. It is to be noted, however, that the recent gains in value are more rapid in the South, standing 110.1 per cent during the past decade for the South, and 90.1 per cent for the North.

Thus it is plain that the farm of the North represents a much higher investment than does the farm of the South. It has been shown in the previous articles of this series that with comparatively few exceptions a high rate of tenancy is found in connection with land high in price, and a low rate where land is low in price. Since land is decidedly higher in price in the North than in the South, and since the rate of tenancy in the South is nevertheless nearly twice as great as in the North, there must be some influence at work other than the value of land. But it was also shown in the articles above referred to that a considerable number of forces were at work in determining the proportion of tenancy; only if other things are equal do the value of land and the rate of tenancy appear to bear a close relationship. In the South the greatest factor in the tenancy problem is the negro, and in proportion to the numbers of negroes the rate of tenancy rises and falls. Along with this primary factor, however, the other factors seem to bring about in the South the same relative results as in the North.

The war left the Southern planter with no reliable farm labor. The negroes were at hand, but authority could no longer be exercised over them, and the payment of wages proved to be too weak in its appeal to induce them to refill the places which they had just vacated. The economic reconstruction of the South involved the development of a system of farming for which there were no precedents, at least none in America; for it meant the use, in some manner, of a million farm hands to be employed in a way to which they were not accustomed. It meant that half a million

planters who had lost most of their property were compelled, as the possessors of the plantations, to make a bargain with the freedmen on such terms that both parties would find it tolerable to proceed with the work of tilling the soil. Information on the early experiments is meager, but it is stated on good authority that the first attempt was on the basis of wages. This was not satisfactory, and it became necessary to put responsibility of a more tangible sort upon the negro. The responsibility took the form of an interest in the crop. By this means it became possible to postpone his reward, in large part, to the time of harvest. In other words, the negro became a tenant of the planter; but not a tenant in the same sense as that implied by the term in the North.

The terminology relating to tenancy in the South requires special attention. In the North we speak mainly of two classes of tenants, — cash and share. The same words are in use in the South, but by "cash" is meant not alone a money payment, but any form of fixed payment. For example, cash rent in the cotton district ordinarily means the delivery at the end of the season of a specified quantity of cotton. Hence, if the landlord receive fifty or one hundred pounds of cotton for each acre as the payment, he is secure so far as returns in cotton are concerned, though he runs the risk of what it will be worth per pound. The tenant views the payment as cash in the sense that it is a stipulated fixed payment beyond which the whole remaining portion of the crop is his. Another form of cash rent is where a stipulated amount of labor is to be performed by the tenant under the direction of the landlord as agreed upon. These "cash" tenants, whether paying in money, in product, or in labor, are known as "renters" or "standing renters," in distinction from the "croppers" or the "halvers" who work the land on shares. The share tenants are of two main classes. First, those who furnish little or nothing in the way of equipment and who get a proportionally smaller share of the crops, usually half. Second, those who furnish a considerable part of the equipment, usually including one or two mules, and who therefore receive a larger share, as two-thirds or three-fourths, of the crop. There is a well-defined caste system among the tenants. The lowest class is represented by those who furnish

little equipment and receive half, or less, of the crop; above this comes the group whose independence is measured by the possession of a mule and a plow and the means of subsistence till harvest time; the highest class consists of those who can be trusted to deliver a certain quantity of crop or possibly a sum of money, and who are by that fact emancipated in the main from the directing authority of the landlord.

The percentages of tenancy for each of the sixteen Southern States for the past four census dates are shown in the table:

PER CENT OF TENANCY, 1880–1910

	1910	1900	1890	1880
Delaware	41.9	50.3	46.9	42.4
Maryland	29.5	33.6	31.0	30.9
Virginia	26.5	30.7	26.9	29.5
West Virginia	20.5	21.8	17.7	19.1
North Carolina	42.3	41.4	34.1	33.5
South Carolina	63.0	61.1	55.3	50.3
Georgia	65.6	59.9	53.6	44.9
Florida	26.7	26.5	23.6	30.9
Kentucky	33.9	32.8	25.0	26.5
Tennessee	41.1	40.6	30.8	34.5
Alabama	60.2	57.7	48.6	46.8
Mississippi	66.1	62.4	52.8	43.8
Arkansas	50.0	45.4	32.1	30.9
Louisiana	55.3	58.0	44.4	35.2
Oklahoma	54.8	43.8		
Texas	52.6	49.7	41.9	37.6

It will be noticed that there has been for the thirty-year period an increase in tenancy in all but four states, — Delaware, Maryland, Virginia, and Florida. Likewise in Kentucky and Tennessee there has been no pronounced increase in the proportion of tenancy during the period. During the past decade there has been in the four states furthest north (Delaware, Maryland, Virginia, and West Virginia) a decided decrease in the proportion of tenancy. These four states thus have come to be in a class with the North Atlantic states, so far as changes in this regard are concerned. As in the North Atlantic states, the character of the farming is miscellaneous; there are many fruit and vegetable farms; the land is not

extremely high in price; withal it does not lend itself especially well to a landlord-tenant system. It is to the south of these states that tenancy is high. Between Virginia and the great cotton-growing states lie North Carolina and Tennessee, both of which have, for the South, but a moderate amount of tenancy. Beyond, there are four with upwards of 60 per cent of their farms in the hands of tenants, and four more, all to the west of the Mississippi, with over half of their farms rented. Taking this row of states from South Carolina to Texas, with Arkansas and Oklahoma to the north, about three farms out of every five are operated by tenants, — a proportion far beyond that of any other group of states in the country.

In the same group of states is to be found the great proportion of the colored farmers. That the negro farmers are, in the majority of cases, tenants, is a matter of common information. That they are gaining in landownership, while the white farmers are losing, may not be so generally known. Such, however, is the case. Unfortunately the Census Bureau did not collect farm data concerning the colored race as such until 1900, thus giving but one decade on which to base comparisons. The fact, nevertheless, of so much landownership by the negroes in 1900 is conclusive proof of great, even rapid, advancement in this respect, since but thirty-five years earlier they had owned substantially no land.

The main facts of ownership and tenancy of both white and colored farmers for 1900 and 1910 are as follows:

NUMBER OF OWNED AND OF RENTED FARMS IN THE SOUTH 1910 AND 1900

Year	Owned Farms
1910	1,554,687
1900	1,387,094
Per cent increase	12.1

Year	Tenant Farms
1910	1,536,668
1900	1,231,028
Per cent increase	24.8

FARMS OPERATED BY WHITE FARMERS

Year	Total Number of Farms	Owned Farms	Tenant Farms	
			Cash rent	On shares
1910	2,207,167	1,336,690	227,517	638,696
1900	1,879,489	1,199,832	186,985	491,652
Per cent increase	17.4	11.4	21.6	29.9

FARMS OPERATED BY COLORED FARMERS

Year	Total Number of Farms	Owned Farms	Tenant Farms	
			Cash rent	On shares
1910	890,163	218,997	285,931	384,638
1900	740,653	188,262	271,692	280,699
Per cent increase	20.2	16.3	5.2	37

PER CENT DISTRIBUTION OF FARMS BY COLOR AND TENURE

Year	White Farmers				Colored Farmers			
	Total	Owners	Tenants		Total	Owners	Tenants	
			Cash	Share			Cash	Share
1910	100	60.5	10.3	29.2	100	24.5	32.1	43.4
1900	100	63.8	10.1	26.1	100	25.4	36.6	38.0

It will be seen that the negroes have gained possession of farms at an appreciably more rapid rate than have the white farmers. Worthy of special mention is the fact that the increase in the number of farms owned by negroes has been about 50 per cent greater than the increase in farms owned by white people. The increase in tenant farms has been greater for both races than the increase in owned farms; but again the colored race makes the better showing. In 1900, 74.5 per cent of the colored farmers were tenants; in 1910 the percentage was 75.3. Of the white farmers 36.1 per cent were tenants in 1900, while the percentage was 39.2 in 1910.

The proportion of cash and share tenancy has changed materially during the past census decade. For the two decades

preceding, cash tenancy increased more rapidly than share tenancy; during the 1900–1910 decade the proportion of share tenancy made a considerable gain, while that of cash tenancy decreased. Among white tenants the change was not pronounced, but among colored tenants it was.

In 1900 out of every 100 negro tenants 51 rented on shares, while 57 rented on that basis in 1910.

For some years a principle in agricultural economics which has received prominent attention is the theory of cash and share rent in relation to the intensivity of cultivation. It is proved that a cash tenant will cultivate more thoroughly, — on the basis, of course, of similar conditions. The situation in the South is such that the principle seems to be contradicted. For example, in the South Atlantic states the share tenants grow four bushels more of corn per acre than do cash tenants, while in the North the cash tenants conform to the doctrine of the economists and produce appreciably more than the share tenants. In cotton yields the case is unmistakable; the share tenant produces more than the cash tenant. The explanation is not far to seek. In the North the tenant follows largely his own plans and impulses. In the South the share tenant is supervised minutely, doing the farm work as prescribed by the landlord, while the cash tenant is left much more to his own devices. Hence the share tenant does better farming than his own judgment would prompt him to do; the cash tenant does poorer farming than his best economic interests would suggest.

The relation of the value of land to tenancy in the South, as elsewhere, is a vital one. It may be viewed in two ways: first, that of the average value per acre of all owned land as compared to the average value of all tenant land. The second viewpoint is that of counties in which land is high in price in comparison with counties in which the price is low. It is by counties rather than by states that conditions sufficiently similar to be comparable are found. In state after state the land held by the tenants is higher in price (usually much higher) than is the owned land. The difference in the leading cotton states in this respect is from 16 per cent in South Carolina to 60 per cent in Texas.

In Virginia, where there are many kinds of agricultural undertakings in evidence but with no one crop by which a great portion of the farm area can be exploited, and where ownership is increasing, the value of owned land is above that of tenant land by about 10 per cent. In Florida also the situation is reversed, owing to the high values of fruit and truck farms, which are mainly operated by owners.

The above comparison is made by taking the owned and the tenant land, with no regard as to the district in which it may lie. Quite another viewpoint is gained by selecting a considerable area within which comparatively good land predominates, and a similar area where cheap land predominates. Comparisons as to tenure may then be tried. No results appreciably different, however, are obtained. The conclusion is that the same forces are at work whether the farms high in price are intermingled with those low in price, or whether they are separated. In the ten counties having the highest-priced land of Georgia the percentage of tenancy is 71.3 as compared to 65.6 per cent for the state. In Texas the ten counties with land highest in price show 63.3 per cent of tenancy as compared to 52.6 per cent for the state. In North Carolina 50 per cent against 42.3. The counties with the low prices of land are in nearly all cases below the average in tenancy. The exceptions to this general rule are, as appears elsewhere, the instances of special-crop production, such as fruit, where the land is above the average in value, but where tenants are relatively few.

The relation of tenancy to the character of the crop grown is close. Here as elsewhere the tenant grows mainly the money crops which can be planted and harvested within a single season. The most conspicuous of such crops in the South is cotton, 60 per cent of which is grown by the tenants. Tobacco is another crop popular among tenants, although they produce only about their proportional share. The great contrast between the farming done by tenants and that done by owners is seen in the figures for live stock, the crops fed to live stock, and in the value of buildings and machinery. The situation is about the same throughout. The tenant grows much less than

his proportional share of corn and oats and about half his proportional share of hay and other forage crops, and he owns less than half his proportion of the live stock.

In buildings the tenant is still further short, having hardly more than one-fourth the value of such equipment as is found on the farms of owners. In machinery the proportion is not quite so low as in buildings. In the North the tenant manages not far from nine thousand dollars' worth of land and equipment. In the South he has the management, with much less independence, of a farm with its equipment worth not over one-fifth as much. The Northern tenant is substantially an independent farmer; the Southern tenant is not.

The Census Bureau in 1900 made a very interesting study of negro tenancy for selected counties, taking for certain states the fifteen counties with the largest proportion of colored farmers, and the fifteen counties with the smallest proportion. It was found that unmistakably the proportion of owned farms was higher where the negroes were few than where they were many. The conclusion was that "the negro, at least, makes the better progress the more closely he is associated with the white man and the more he is enabled to see in the example of the white man an incentive for becoming a landowner. Take away this example by segregating the colored man from the white, as in the black belt of the South, repeat Haiti in a lesser degree, and some of the Haitian conditions are reproduced." A similar study of the 1910 data for four of these states (Georgia, Alabama, Mississippi, and Texas) fails to reveal a further development in the direction indicated by the investigation of 1900. In the blackest counties there was, it is true, a decrease in the percentage of negro owners, likewise of white owners. But unfortunately for the theory that negroes scattered among white would be inspired to greater efforts and greater achievements, the negro owners under these conditions also decreased. They decreased at even a greater rate than in the black belt, as may be seen in the table on the next page.

PER CENT OF FARMS OF SPECIFIED TENURES, OPERATED BY WHITE AND NEGRO FARMERS, 1910 AND 1900, IN SELECTED COUNTIES OF ALABAMA, GEORGIA, MISSISSIPPI, AND TEXAS

A. In Fifteen Counties in Each State with Largest Per Cent of Negro Farmers

State	Date	Farms Operated by Whites		Farms Operated by Negroes	
		Owners	Tenants	Owners	Tenants
Alabama	1910	59.2	40.8	8.8	91.2
	1900	61.2	38.8	8.5	91.5
Texas	1910	57.5	42.5	28.3	71.7
	1900	60.9	39.1	28.9	71.1
Georgia	1910	56.5	43.5	14.6	85.4
	1900	59.5	40.5	17.4	82.6
Mississippi	1910	50.2	49.8	7.2	92.8
	1900	58.7	41.3	8.1	81.9

B. In Fifteen Counties in Each State with Smallest Per Cent of Negro Farmers

State	Date	Farms Operated by Whites		Farms Operated by Negroes	
		Owners	Tenants	Owners	Tenants
Alabama	1910	59.2	40.8	32.2	67.8
	1900	64.8	35.2	39.2	60.8
Texas	1910	51.3	48.7	20.6	79.4
	1900	57.1	42.9	33.3	66.7
Georgia	1910	54.8	45.2	24.5	75.5
	1900	59.4	40.6	27.3	72.7
Mississippi	1910	61.7	38.3	31.7	68.3
	1900	70.0	30.0	38.6	61.4

On very few occasions have renters in any part of the United States acted in a concerted manner on economic problems. There have seldom been any recognized tenant issues. In the state of Texas, however, a little over a year ago an organization of tenants was formed for the purpose of bettering the conditions of renting land, and, if possible, doing away with it. The organization is called the Renters' Union of America. The resolutions passed at a meeting of this body savor strongly of single-tax doctrine.

This is interesting, especially in that it recognizes the undoubted fact that speculation and tenancy are intimately related. When men buy land with a view to sale at a higher figure within a comparatively few years, even though the income in the form of rent be of secondary consideration, a large portion of such land will be for rent. Except in a new country it is seldom profitable to hold land out of use while waiting for a rise in price. Therefore the land of the speculator is for rent, and in the larger share of instances such a landlord prefers to rent for cash, and worries very little about the welfare of the farm or of the tenant. Against these conditions the Renters' Union of America passed a series of long and drastic resolutions, among which was one favoring a tax "to the limit on all land held for speculation or exploitation." They declared that "use and occupancy" was the only just basis for title to land.

At the meeting in 1911 the union took a stand against cash rent altogether and voted that share rent should not exceed one-third of the crop in grain, or one-fourth in cotton. At the 1912 meeting, however, this action was rescinded and the matter left to the discretion of the county organizations. The success of a tenant movement in the South will find its greatest obstacle in the high proportion of negro tenants, who are not capable of effective organization. Where the majority of the farmers of a state are tenants and at the same time voters, it would seem possible that political action might be taken by which the speculative value of land would be reduced. That this would reduce rents is another question, though it might result in larger ownership of land by farmers.

Unquestionably, the greatest evils of tenancy center about the fact of frequent, almost constant, moving from farm to farm. In the South about half the tenants move every year. The average period of occupancy by tenants is therefore but a very few years. In the North the same condition predominates, though not in a form so exaggerated. Home and neighborhood ties, interest in schools, in organizations, or in any community affairs can hardly be expected of people who are almost destined to sever their connections with a given community and move to another within

a year or two. For these undesirable conditions a favorite remedy is the long lease. No doubt the longer lease would carry with it certain desirable results. It is, however, not easy to comprehend how the long lease is to be put into effect where landowners stand ever ready to sell their land. Again, if landlord and tenant cannot agree to continue from year to year the arrangements of a short lease, it is questionable whether or not they would be able to enter into an agreement for five or eight years and carry out the contract in a way satisfactory to both. England is pointed out frequently as the splendid example of the land of the long lease. It is true that the tenure of the tenant is usually secure; but, contrary to the prevalent notion, the lease is in most instances a short one. The landlord finds a suitable tenant and keeps him almost indefinitely, — often a lifetime. But in England very little land is for sale, and few tenants hope to become landowners. In America the greater number of farms are for sale, and the majority of tenants acquire landownership sooner or later. During this stage of frequent sales of farms, the long lease will not be viewed with favor by the landowner. Neither must it be taken for granted that the tenant will always take kindly to the longer contract.

An impoverished soil and an impoverished people will result from a continuation of the present unstable conditions in the matter of tenancy. There are, no doubt, counteracting forces. A slackening in the advance in land values will make for stability in ownership and a better landowner class. Education concerning the nature of soil and crops will improve the tenants as well as other farmers. Better organizations through which to effect the marketing of farm products will encourage farmers, including the tenant. A better system of farm credit will make the acquisition of land easier. This seems to be the effect in Europe, notwithstanding the tendency of better credit to raise the prices of land. Better schools and better roads, — in fact, better rural conditions of every sort, — will stimulate a desire to own land and keep the farm people on the farms. The need for a plan by which the young farmer can become a landowner, and also a plan under which the tenant system can be made tolerable, are beyond doubt

among the greatest needs of American agriculture, and especially of the South. No ready-made program suggests itself; the remedy will undoubtedly be one of many ingredients. Thus far we are just beginning to gain a sufficient knowledge of the case to admit an intelligent diagnosis.

TENANCY IN THE WESTERN STATES

By Benjamin H. Hibbard

(From the *Quarterly Journal of Economics*, Vol. XXVI, p. 363, February, 1912)

THE Western division of states, or in terms of the census of 1910, the Mountain and Pacific divisions combined, comprise twelve states, occupying the Rocky Mountain region and extending westward to the Pacific Ocean. In area these states are large, being equal to two-fifths of the land surface of the United States. From the standpoint of agriculture, however, they do not fill so important a place. Within this vast extent of territory are found but one-seventeenth of the whole number of farms of the United States, one-eighth of the acres of farm land, and one-ninth of the total value of farm land and buildings. In comparison with the North Central states there are but one-fifth as many farms, three-tenths as many acres of farm land, and less than one-fifth as great a value of farm land and buildings.

As to their products, the Western States make a good showing, whether in proportion to the number of farms or to the acres of farm land. Of wheat these states, with 9.1 per cent of the total acreage, report 13 per cent of the total product. Of barley they report 23 per cent of the acreage and 27 per cent of the product. In the acreage of oats they report 5.5 per cent of the total, and in the proportion of bushels produced, 6.8 per cent. A showing no less good is made in respect to hay and forage, the division reporting one-eighth of the acreage, and one-sixth of the yield of this crop. A still better showing is made in fruit production, although comparisons with other divisions are not altogether easy to make. Of the total number of cattle of the country these states contribute about 15 per cent, and of the sheep, 59 per cent.

It is thus apparent that the Western States are characterized by a low average price of land, accompanying which one finds, so far as the main extent of acreage is concerned, the live-stock and the grain-growing industries. There are, however, a great number of instances of agriculture as highly specialized as is to be found anywhere in the United States. This, for the most part, is devoted to fruit and vegetable farming. Where the general and the specialized farming is within the same county it is not a simple matter to trace the characteristics of each as regards tenure. However, in a considerable number of instances the types of farming are fairly separated, making the case an easier one.

Another prominent characteristic of the Western country is its newness. Of the acreage of farm land added to the total within the United States during the past decade, nearly half was within this division of states. More homesteads have been taken during the past decade than for any other since the passage of the Homestead Act. During the same time a few thousand Carey Act entries have been made, and, in addition, large numbers of farms have been granted under the various other acts in vogue. Within the past seven years entries of public land in the Western States have equaled in extent the entire state of New Mexico. Nearly all of the farms recently acquired from the government are counted as owned farms and so tend to reduce the proportion of rented farms within the states in which they are located.

Of the 373,000 farms in the Western division in 1910, 52,000, or 14.1 per cent, were in the hands of tenants. This is a smaller percentage than for any of the geographic divisions of states except New England, and less than two-fifths that for the United States as a whole. Moreover, the price of land is lower in the Western States than in any other division of northern states outside of New England. Taking the northern and western states by divisions, as now recognized by the Census Bureau, the relation of tenancy to value of land may be viewed in the large. It would hardly be instructive to include in this comparison the Southern States, since the tenant question is there so essentially different from that of the North.

VALUE OF LAND AND PER CENT OF TENANCY

	Value per Acre	Per Cent of Tenancy	Rank in Value	Rank in Tenancy
East North Central . .	$61.32	27.0	1	2
Pacific	43.76	17.2	2	4
West North Central .	43.20	30.9	3	1
Middle Atlantic . . .	33.85	22.3	4	3
Mountain	19.72	10.7	5	5
New England	19.27	8.0	6	6

The relationship between values and rate of tenancy may seem at first glance to be a very uncertain one, and therefore worthy of little attention. But the absence of correlation in these particulars is due mainly to the high rate of tenancy in the West North Central division, and to the low rate in the Pacific division; aside from these two divisions the rankings on the two bases are similar indeed. It will be remembered that in the West North Central division the conditions are especially favorable for the development of the type of farming to which the American system of leasing is adapted, and this fact accounts for the relatively high percentage of tenancy in this division. The table given above shows the Pacific division to rank second in value per acre, although this and the West North Central division (which ranks third in that respect) are less than a dollar an acre apart. It cannot be doubted that if we consider only the characteristic part of the West North Central division — that is exclusive of the great body of very cheap land in the extreme western and northern portions — then the North Central and Pacific divisions change place as to rank in value per acre; and this single shift brings the rank in value and the rank in tenancy very close together for all divisions. But value per acre is only one factor affecting the proportion of tenancy. As will be pointed out presently, other factors figure with unusual prominence in the Western States, holding the percentage of tenant farms below what it would be were only the more general type of farms found. It remains true, however, so far as regards farming of the more usual sort, that the proportion of tenant farms rises with the rise in land values.

The percentage of tenancy in the Western States in 1910 was less than that in 1900, when 16.6 per cent of the farms were in the hands of tenants. The decrease is apparently due to two main causes. In the first place, the great number of new farms taken from the public domain has increased the number of owned farms and contributed but little to the number of tenant farms. On the other hand, the development of special lines of agriculture, particularly the growing of fruit, has resulted in an increase in the number of small farms in the hands of owners. Aside from these two main causes there are important changes in respect to some of the leading kinds of farming, such as wheat growing; accompanying these movements there has been a considerable change in the percentage of tenant farms. In the main the tenant farms are about the same in size as are the owned farms, although among the owned farms is found a great majority of those upon which fruit is the chief crop. This would seem to point towards a smaller size; but the tendency is largely offset by the fact that amongst the owned farms are found also the greater proportion of live-stock farms, which are on an average very large. It is then the farms intermediate between these largest and smallest ones, namely, the farms on which the most of the general farming is done, such as the growing of the cereals, which show the greater number of tenants.

The land highest in price is not that which for the most part constitutes the tenant farms; the situation being thus unlike that in the North Central states. On the contrary, inasmuch as the land highest in price is that used for fruit growing and this industry is mainly in the hands of owners, a large percentage of ownership instead of tenancy appears on this highest-priced land.

In California, within the counties in which land is worth $60 or more per acre, the percentage of tenancy is 20.1, while in the counties in which it is worth from $30 to $60 per acre, the percentage of tenancy is 22.5, and in those under $30 per acre, 19.8 per cent. The situation, with reference to the high-priced land, is unlike that in any one of the states of the Middle West. Likewise, in the state of Washington in the counties in which the average value of land is $60 or more per acre the percentage of

tenancy is 12.9, in counties with values from $30 to $60 per acre the percentage of tenancy is 15.9, while in counties with farm land valued at less than $30 per acre it is 11.7 per cent. In Colorado the counties with land at $35 and over per acre show 25.7 per cent of tenancy; those with land at $20 to $35 per acre, 30.8 per cent.

Using as the criterion the total value of the farm instead of value per acre, it appears that the tenants are in charge of the high-priced farms much more than is the case with those low in price. In Oregon the group of counties showing the lowest-priced farms has 12.5 per cent of all farms in the hands of tenants; the group of medium price, 16.2 per cent; and the group of highest price, 17.6 per cent. In Washington the percentages on the same basis are 6.2 per cent for the cheapest farms, 12.7 for the medium, and 19.9 for those highest in price. In Colorado the low-priced group shows 9.8 per cent of tenant farms, the medium, 18.7 per cent, the highest-priced group, 28.7 per cent. This relationship between price of farms and tenancy is due in the main to one general fact. Here as elsewhere the tenants are doing the extensive rather than the intensive farming; they are the grain farmers. Conditions are such that the average value of the grain farm is above that of the stock farm, since the latter, although large, is usually very low in price per acre. Again, the grain farm as a unit is of higher value than the fruit farm, since the latter, though high in value per acre, is of small size.

The proportion of farms in the hands of tenants has increased simultaneously with the growth of the small-grain industry, and has decreased where small-grain farming has declined. For the Western division as a whole the tenants have been raising about 50 per cent more than their proportional share of the oats and wheat and more than double their share of the barley. Wheat growing was carried on in California on a considerable scale for many years until within the past decade, and was located mainly in the great central valleys of the state. With hardly an exception the counties in which there were great acreages of wheat show a higher percentage of tenancy than the average for the state. Since 1900 the wheat-growing industry has declined

greatly throughout these valleys, and during the same time the percentage of tenancy has fallen from a proportion above that for the whole state to one quite below it. The same situation is found in Oregon, where with the decline of the wheat industry in the western part of the state the proportion of tenant farms has decreased to a marked degree. On the other hand, the acreage of wheat has increased rapidly in the northeastern part of the state and at the same time the proportion of tenant farms has gained rapidly. So in the state of Washington, while the percentage of tenant farms decreased during the past decade for the state as a whole, there was a sharp increase in the southwestern part of the state, where also the acreage of wheat increased very greatly, — in fact, more than doubled. Within the twelve counties leading in wheat, which produce 95 per cent of the wheat grown in the state, 24.2 per cent of the acreage of this grain is reported by tenants.

In contrast to the high percentage of grain-producing farms in the hands of tenants is the very low percentage of fruit farms so operated. The situation found in the Eastern states is repeated in the West with emphasis, the more pronounced condition being due to the more highly specialized character of the Western fruit farming. The more valuable the fruit farm, either per acre or as a whole, the less likely is it parted with under lease. The oranges, lemons, grapes, and apples are produced mainly by men who own the land on which they are grown. Of the great orange crop of California less than 2 per cent is grown by tenants, and of the lemon crop but little over 4 per cent. Vineyards are not so high in price per acre as are orange and lemon groves, neither does it take so long to bring them to bearing age; hence a somewhat larger percentage is in the hands of tenants. Yet in the fourteen leading grape-growing counties of California the proportion of grapes produced by tenants is but 9.2 per cent, while in the same counties the proportion of tenant farms is 21 per cent, or over twice as great. Apples are not grown so exclusively by special farmers; they are reported in considerable quantities from farms on which grain is the leading source of income. Hence the grain farms in the hands of tenants frequently produce important

amounts of apples. In the seven leading apple-growing counties of Washington one-sixth of the farms are operated by tenants, but they report only 13 per cent of the apples grown. This, however, does not give an accurate picture of the situation, since several of these counties are among the greatest in the production of wheat, a fact which accounts for the relatively high percentage of tenancy. Within these counties apple growing is a subordinate industry. It is in such counties as Chelan (Washington) or Hood River (Oregon) that the characteristics of the apple farm can be found well isolated. In both of these counties the proportion of tenancy is low — in Chelan County, 6.6 per cent; in Hood River, 5.5 per cent. In Chelan County the tenants report only 4.5 per cent of the apple trees of the county; and in Hood River only 5.6 per cent. For each of these counties the tenants report a higher percentage of the total quantity of apples than of the total number of trees, showing that in a few instances bearing orchards are rented.

Unlike fruit growing, the raising of vegetables is very frequently done by tenants. In 1900 the tenants of the Western States operated more than double their proportional number of vegetable farms, and although the same classification is not made for the census of 1910, the situation is apparently unchanged. The most important vegetable-growing districts of the West are in the vicinity of Los Angeles and Seattle. In Los Angeles county 52 per cent of the vegetable acreage is reported by tenants, and about the same in King County, Washington, in which Seattle is located. These vegetable farms are of small size, consisting usually of a few acres of land rented for cash to Japanese or Chinese gardeners.

As in other parts of the United States, the tenant of the Western division owns comparatively little live stock. In 1900 he had not much over half his proportional share; in 1910 the situation was not greatly changed. In a few states, however, the tenants have their full quota of dairy cows, while they undoubtedly have in all cases their full share of draft animals, although it is difficult in the statistics available to distinguish them from range animals.

PER CENT OF TENANCY, 1880–1910

	1910	1900	1890	1880
Western States	14.1	16.6	12.1	14.
Montana	8.9	9.2	4.8	5.3
Idaho	10.3	8.7	4.6	4.7
Wyoming	8.2	7.6	4.2	2.8
Colorado	18.2	22.6	11.2	13.
New Mexico	5.5	9.4	4.5	8.1
Arizona	9.3	8.4	7.9	13.2
Utah	7.9	8.8	5.2	4.6
Nevada	12.4	11.4	7.5	9.7
Washington	13.7	14.4	8.5	7.2
Oregon	15.1	17.8	12.5	14.1
California	20.6	23.1	17.8	19.8

Since 1880 tenancy in the Western States has fluctuated considerably, as the table shows. Beginning in that year with 14 per cent it fell to 12.1 per cent in 1890, rose to 16.6 per cent in 1900, and decreased again in 1910 to a figure just barely above that of thirty years before. Notwithstanding the decrease in tenancy in the North Atlantic states during the past decade, there has been in general an appreciable advance in the proportion of tenant farms for the thirty-year period between 1880 and 1910. But the Western States show no such tendency. Of the eleven states in the Western group but a single one, Wyoming, shows for the whole period an uninterrupted increase in the proportion of tenancy, and, as it happens, it has had throughout nearly the lowest proportion of any of these states. With hardly an exception, the states in which the most extensive systems of farming have predominated, and these are the older states in point of agricultural development, are the ones in which the percentage of tenant farms is highest.

For the United States other than the South, 25.6 per cent of the farms in 1910 were operated by tenants, as compared to 25.5 per cent so operated in 1900. The difference seems to be virtually nil. To say, however, that the advance in the proportion of tenancy has come to a standstill would be unwarranted. As shown in the preceding articles in this series, the tendency is still

apparently toward more tenancy in the greater portion of the upper Mississippi Valley, by far the most important agricultural area of the North. This tendency toward slow but certain increase is offset for the present, partly by the decreases in the East where cheaper land and specialized farming promote ownership, and partly by the peculiar conditions of the Western division of states, where both specialized agriculture and the public domain are factors in keeping the proportion of ownership high and that of tenancy low. No type of farm is immune from tenancy infection, though a few types are nearly so, while, on the other hand, certain types are especially susceptible. The change, so far as the great body of farms in the North is concerned, is imminent, notwithstanding the apparent respite in the advance. Yet it remains true that the increase in the proportion of rented farms for the United States as a whole, from 35.3 per cent in 1900 to 37 per cent in 1910, is due chiefly to the relative increase of farms of this class in the South, where the problem is an essentially different one.

Although there are many tenants in the United States, there is, outside of the colored tenants of the South, no tenant class. The tenants are young men who turn to this way of getting a start in the business of farming. In almost all cases the beginning is made in the hope of becoming a farm owner within a comparatively few years. That hope, though frequently long deferred, is eventually realized in the greater number of cases. For example, the census of 1900 shows that between the ages of 25 to 34 more farmers were tenants than farm owners. But the change in form of ownership begins at once after the age of 34, and for the higher-age groups owners are more numerous than tenants. At the age of 65 years or over, owners are more than five and a half times as numerous. There has been much dispute as to whether or not tenancy is a step toward ownership, but the case does not seem open to argument. Tenancy is a means of getting a foothold and makes possible the ultimate ownership of land. The only question — an open one — is whether it is the best means of accomplishing the result.

Though we have many tenants, we do not have, outside of a few instances, a tenant system. The relation of tenant to landlord is an uncertain one, and very frequently one unsatisfactory to both parties. Such it must remain until the landlord is willing to content himself with a reasonable rate of income on the investment rather than to hope for something more than ordinary income, something in the nature of speculative gain to be realized only by selling the land. On the other hand, the tenant must be given some assurance that he may stay, if he wishes, more than a year or two on the same farm. Men fail to become landowners, or postpone for years the time when they become owners, because farming as they pursue it does not pay well enough to enable them to buy land. The reason it fails to pay better is doubtless because the tenant as a rule is not a good farmer; but the fault is not altogether his. The owner of the land leases it under such terms that the tenant is not encouraged in the use of scientific methods. The tenant is far from being a conservationist. He is interested in immediate results, and immediate results are obtained by exploitation. Moreover, the tenant does not even produce the best crops; he lags behind the farmer who tills his own soil. From two standpoints, then, society has cause for complaint; for society has a right to expect good results in the yield of crops and such care of the soil that it will continue at its maximum productivity. Furthermore, society is concerned with the relation of every individual to the community; but the tenant is little disposed to assume community responsibilities.

To complain of the growth of tenancy is useless. The serious question is that of a remedy. A remedy, if there be one, must be in the nature of a plan by which a young farmer can buy land. With the land high in price, the purchase must be mainly on credit. True, the products of the farms are also high in price, but our bunglesome system of distribution returns to the farmer but half or two-thirds of the price the consumer shortly pays. Could the farmer overcome this expensive way of getting his wares to the market, he could more easily own the land on which they grow. Another great problem is that of agricultural credit.

It has been well solved in several European countries; but in America the farmer pays a high rate of interest on what he borrows, and is frequently short of ready capital for carrying on advantageously the operations of the year. A good system of marketing and a good system of credit would retard the movement toward tenancy. But even so, an equitable system of leasing land is needed, one which in itself will make tenancy more tolerable and possibly less frequent. The arrangement under which one man owns the land and another tills it is not necessarily bad; it may conceivably be of advantage. Yet it must be recognized that landownership on the part of the farmer is one of the best assets he can have both as a producer and as a citizen.

IV. AGRICULTURAL LABOR

ON THE RECOLLECTIONS OF A HIRED MAN

A SOCIOLOGICAL TREATISE

By M. A. Barber

[The following article describes, with much acumen, a type of farm laborer which is peculiarly American, and of the nineteenth century. Most American farmers doubtless looked upon the farm hand of that period as normal and took him as a matter of course. But he was a highly specialized development; probably nothing like him ever existed before and may never exist again. Therefore this description is not only of present scientific value, but will at some future time possess great historic value. — Ed.]

NO REPUTABLE sociologist nowadays ventures to present his work to the public until he can point to a firm basis of personal experience on which to rest his thesis. I hasten therefore to preface this paper with a description of that period of my life when I was a hired hand on a Kansas farm, and you will readily see by the frequent use I am required to make of the personal pronoun, both subjective and objective, that I am not wholly ignorant of that of which I write.

On the completion of my junior year in the Burlington high school, I felt that I ought to get out and do some real work, work that should not only preserve me from further idleness, but bring some financial advantages besides; so I agreed to tend the twenty-five acres or so of corn on the farm of Napoleon and Abigail Thornrich, for the consideration of fourteen dollars per month and keep. Not that Mr. Thornrich would have needed help in ordinary years, but he had been convinced by some insurance company that it would be much more profitable to persuade other farmers to renew their lapsed insurance policies than it would be

to farm himself; and since his son Charlie had become incapacitated for manual labor by a clerkship he had once held in Chicago, it became necessary to hire a man.

The first week or so of sociological life was a rather bitter experience, for, besides being green to hard work, I was decidedly ill. I do not know whether it was due to the cold and dampness of the well I helped my father clean out, or to the fumes of the green paint I used to renovate a lot of blinds. I am only sure that the cherries in my father's yard, then just arrived at that dangerous limbo which lies between toothsomeness and wholesomeness, had nothing to do with my state of health. But, whatever the cause, I had during those first days neither satisfactory rest nor appetite. I had only thirst and high ideals of the mission of the hired man. My employer was very kind and kept counselling me, "take it easy, bub," and Charlie used to bring me decoctions of ginger in the field when I was thirsting for cold water; but I thought I had hired out to work and had to earn my salary, even if every muscle of my aching back seconded the advice of my employer. I did give in once to the extent of asking the advice of my brother, who lived on an adjoining farm, as to whether I ought not to lay off until I got well. But, after the peculiar fashion of older brothers, he seemed to think I would get well more quickly by sticking to work, and so I got from him no encouragement to quit.

It was well enough that I did not, for I soon recovered spirits and appetite, and until my ingrowing toe-nail came into the problem I was fairly free from all physical discomforts.

After the corn was laid by the estate had no further use for a hired man and so I resigned. Shortly afterwards I hired out again to my brother for the haying season. This afforded me another viewpoint of this important economic question. As I shall elaborate later in my chapter on the social status of the hired man, this employee enjoys social equality and, on Kansas farms at least, a considerable degree of respect besides. Now, when you work for a brother fifteen years your senior, you may be treated as a social equal, but respect — that is a different matter. So I advise all experimenters in sociology to work for

an older relative for a term, if they would have full opportunity of studying all phases of their subject.

After my brother's hay was all in, the Thornrich farm was once more in need of a hand, so I hired out again, this time at the advanced wages of seventy-five cents a day, during the haying season. This advance was given me, first because I was now skilled labor, and secondly because of the theory that haying is harder than ordinary farm work — an economic fiction in this case, for quite the reverse was true. For, since I had to perform the whole round of haying duties myself, I had plenty of variety, and lighter work than that of the man who pitches on the load and on the stack all day. My first duty was to mow a small tract, which included taking the machine to a neighboring blacksmith for its bi-weekly treatment.

Here I will mention an apparent anomaly (but in truth the rule), or, as I should say, since I am writing a sociological paper, a broad generalization. The more inventive the farmer, the more decrepit the tools on his farm. Now, Mr. Thornrich was something of an inventor. He had devised a method of setting tires which was a great improvement on the common method. Ordinarily, in accomplishing this end you shorten the tire; by Mr. Thornrich's method you enlarged the wheel. This was accomplished in the following manner. By means of a lever placed on the hub of the wheel, you lifted what, to avoid technical terms, I will call the wooden rim just inside the metallic tire, and inserted a washer at the end of the spoke to hold it in place. This you repeated in turn on all the spokes of the wheel, until your vehicle rattled no more. It is true that you might square the circle of the wheel, or at least make a polygon of it, but you tightened the tire. Not only did Mr. Thornrich possess mechanical skill in himself, but he had transmitted a goodly portion of it to his son. Charlie had constructed a buckboard himself, using for this purpose, if I remember rightly, the cast-off wheels of a cultivator. This vehicle was properly constructed in all its parts, and might have lasted out its hundred years but for the minor defect of having the nuts at the hub screw on in a direction opposite to that of the movement of the wheel, so

that the buckboard had the habit of quietly divesting itself of its wheels when it got well clogged with mud or dust. While I do not consider that Mr. Thornrich was always happy in his mechanical devices, I should not go the length of subscribing to the opinion which the blacksmith expressed one day when I had the machine around to have a broken guide mended. I had told him that Mr. Thornrich had said that if he had only had the proper tools he could have fixed the break himself easily enough, as all it needed was a substitute for the broken guide. "Substitute, eh," said Vulcan, "substitute! Now, yew tell old man Thornrich that he 's kind of a durn substitute himself." I did not tell Mr. Thornrich, but I told Charlie, who seemed mightily amused.

But to return to the haying. After a sufficient amount of grass had been cut and dried, I raked it. Then I hitched up to the old hayrack and, accompanied by Charlie, went out for a load of hay. I pitched on, and Charlie loaded. On arriving at the barn, Charlie retired to the parlor and Mr. Thornrich came out to stack while I pitched off; easy enough work, when you remember that a good part of our time was spent on the half or three-quarters of a mile's road which intervened between the hayfield and the barn. Thus between the three of us we got up a supply of hay for the winter. We were three now, because Mr. Thornrich had returned from his insurance venture. That spring, beginning very wet, had turned off dry, so that the ground soon became of the consistency of well-baked bricks. And it was bricks without straw that year, so that the farmers preferred to risk the ills to come rather than submit to the present evil of paying insurance premiums. With the hay all in, my experience as an employee ended for that summer, and I returned to the quiet and leisurely life of a student in the Burlington high school.

I have, perhaps, so far taxed your patience with this rather long preliminary that I may have to abbreviate the solider part of my paper, but, as I stated at the beginning, it is necessary nowadays to convince the reader of a paper of this sort that the writer is equipped with a practical, first-hand knowledge of his subject. As to qualifications, I claim two important points of

superiority over the average experimenter. In the first place, I was a real hired man. The sociological tramp or beggar must feel that the note-book which he carries under his rags is a barrier to a full sympathy with his subject; and he must admit that if he became the real thing, the first thing he would do would be to pawn his fountain pen for the price of a drink. Again, I embody this experience in a treatise only after twenty years of meditation on my data. This last custom I strongly commend to all sociological writers. What a gain to sociological literature if practical experiences were never served to the public until they had ripened twenty years in the brain of the scientist!

Hoping I have won your confidence, I now begin on the first chapter of my book. No, I forget: I must first insert a chapter setting forth the importance of my theme and the neglect which it has suffered in the past at the hands of other writers.

This importance and this previous neglect are so self-evident, however, that a sentence or two must convince you of their existence. Page after page is written on the tramp, the grafter, the lace-maker, and what not; but how many articles have you seen setting forth the condition of the hired man, that patient, unorganized, unstriking but all-important factor in the machinery of an agricultural people? That he may be neglected no longer, I will cut this chapter down to a single paragraph and proceed at once to my second chapter, The Remuneration of the Hired Man.

During my time adult hired men got from fifteen to seventeen dollars a month, board, room, washing, and lodgings included. In some exceptional cases more was paid. At the present time wages are a little higher — from seventeen to twenty dollars a month. In other words, it takes the earnings of about five days to buy a pair of top boots and overalls, while in my time it took about a day longer. To earn a top buggy now requires the savings of about four months, and to earn a suit of good clothes requires a full month longer. So counting in the expense of horse feed — the hired man usually owns a horse — nearly a whole season's work is needed to properly equip the farm laborer for the pleasures of the winter literary society, singing school,

and church socials. At the present time some farmers furnish a small house and garden, with privileges of pasture, to a married man and his wife. Both board themselves and do their own washing. Under such conditions, the man receives from twenty to twenty-five dollars per month. Since top buggy and other society expenses are saved under these circumstances, this is probably the most economical way to hire out.

From a consideration of the income of the hired man, we are naturally led to Chapter III, The Pleasures of the Hired Man.

Among these I will mention first the athletic pleasures. It seems peculiar that the man who works hard with his muscles from about five in the morning until half-past eight in the evening, with a short nooning, of an hour perhaps, should, especially if he be a young man, turn to athletics the first thing after the chores are done in the evenings. Foot-races, jumping, turning pole, swimming, all are popular, especially if some neighbor lad comes over from the next farm to join in. If the weather is such as to prevent farm work — a meteorological condition rare in the records of the "hand" hired by the month — the boys hunt for a pitchfork handle suitable for a turning pole, or search for four horseshoes of sufficient uniformity to serve as quoits. On many an evening after the work was done I have joined a party to go swimming in some neighboring mud hole. When the ponds, so common on Kansas farms, are just newly made, they may be grass-bottomed — famous watering places then, and the rendezvous of all the boys of the neighborhood ; but in an alluvial region this happy state of affairs is but transitory. You walk into the water until there is a temperate zone of warmth about your middle while your feet are several inches deep in the frigid mud, and bubbles of gas, stirred from their resting place at the bottom of the pool, rise gurgling along your legs. While you are in deep water you can keep reasonably clean, but on coming out, the first thing after completing the bath is to look for some place to wash yourself.

Among the pleasures not athletic are the summer ice-cream socials, destined more for the glory and advancement of the church, however, than for the pleasure of man. You ride six or

eight miles of a dark night after a hard day's work, your fatigue aggravated by the good clothes you have to wear. Arriving at the school-house, you are invited to pay ten cents for a dish of watery ice-cream and a square of cake, served by some young woman whom you do not know and are afraid of being introduced to. After the refreshments, if you are refreshed, and the programme, if there is a programme, you drive home again, to arrive, perhaps, a little before breakfast-time.

But the real, the substantial pleasure of the hired man's life, especially if he is hired by the day during the haying season, is the rainy day. Does the pious Hindoo, his hundred cycles of laborious life completed, awake to diviner music than the melody of pattering rain, accompanied by the staccato of dripping eave-troughs? When you meet your employer downstairs, your face wears a look of gloom. "It 's too bad, is n't it, to lose that hay we raked up yesterday; but"—and how easy it is for your countenance to lighten up again—"but this is a mighty fine thing for the corn."

I hardly know where to classify my paragraph on The Religious Life of the Hired Man, and it may be best to devote a whole chapter to this important topic in the second edition of my work. For the present, however, I shall put it in with the social pleasures, though it must be admitted that the expedient is hardly a happy one. For, in the first place, it is necessary to put on a coat and vest for the church-going, and, since the same good suit does for both summer and winter, it is a costume hardly suitable for a hot summer day. You ride to the service seated on the front seat of the spring wagon with your employer, while the women folks of the family occupy the seat behind, the one with a back to it. And, while your seat may be cushioned, it seems far less comfortable than the hayrack, and the whole drive is in harmony with your stiff Sunday suit. On arriving, the women folks are unloaded on the platform in front of the school-house, while you go with your employer to help tie the team—an important operation, sometimes, and one involving considerable knowledge of equine psychology. I remember, for instance, a certain Old Bill, who tolerated no hitching rope except that which connected him with

his manger. He would stand quietly for hours beside his haltered mate, but to attempt publicly to confine his own person was to invite a certain and disastrous interruption of the Sunday decorum. This task done, you go to the shade of the school-house and talk crops and weather with the other farmers until the arrival of the preacher's buggy announces that it is time to rejoin the women who sit stiffly inside. No, I did not mean to say rejoin; for you go with the other men to a place on the men's side — it is only the young man who has taken a girl to church who dares to cross the aisle which separates the sexes, accustomed from childhood to sit on opposite sides of the school-house. Who knows how much influence this custom has had on our anti-suffrage legislators, many of them brought up in country districts, and trained to the idea that in all public functions it is necessary to have a great gulf fixed?

The services begin with a hymn or two, the timid soprano on the left joining in with a thunderous but uncertain bass on the right. Then comes the sermon, not a dissertation on the authorship of the writings of Moses, not higher criticism sandwiched in between a text and a prayer, but a real sermon, rousing amens from the seats in front and echoes from the fields about; and the minister closes, not with an appeal to your judgment regarding this or that biblical authority, but with the request that you stand up and be convicted of sin.

The going home is rather pleasanter, for you have the immediate prospect of getting into some more comfortable clothes, and the more remote one of getting something to eat. The attendance at church and Sunday-school delays domestic operations somewhat, and the Sunday dinner is always late.

The parlor is open Sunday afternoons, and you may enter with the rest of the family and have your turn at the religious and the secular weekly. There may be callers to help entertain, and you get the temporary relaxation of turning the ice-cream freezer or of going out to the well to haul up the watermelon. Together with your employers, you rise into the higher social stratum of the day, a remark which brings me to my next chapter, The Social Status of the Hired Man.

As children, we used to number the years on the farm by the "hands" we had employed, much as nations mark their calendars by their changes of kings. There was the year of Will Williams, the years of Owen Williams, the summer we hired Bill Jones, the interregnum which followed the turning off of Bob Peters, and so on. One of the marked characteristics of American farm life is its democracy, and this is well illustrated by the relations which exist between employer and hired man. Often the son of a neighboring farmer, the "hand" enjoys the same consideration as that received by a member of the family. He sits at the same table, and shares in the dishes as early and often as the other men of the family. He probably would be asked to join in the evening game of checkers or authors, if there were any evening between summer chores and bedtime. He has a voice in family debates regarding the election of a new schoolma'am, and his opinion is of weight in the discussion of current politics or the proper time for weaning calves. His joys are those of his employers and his sorrows their sorrows. A discussion of these sorrows I have reserved for a separate chapter, The Sorrows of the Hired Man.

In my preface I dwelt sufficiently on the physical ills contingent on farm life, and I need mention them no further. Considering the wholesomeness of out-of-door work, they are probably less than those of young men of any other profession. The ill that I shall describe I ought, perhaps, to classify as a psychological one, that sorrow of the hired man occasioned by the bashful consciousness of being a farm hand — an evil, like his joys, not peculiar to his condition, but shared by his foster-brothers, the sons of the family. This feeling does not disturb ordinarily, but intrudes only on occasions when he is contrasted with people who walk in daintier paths. One of these occasions arrives when a town girl comes out to spend a week with an older daughter of his employer, in response, possibly, to an invitation made when both girls were students in the Normal. Then the hired man suddenly realizes how great his hands have grown, and how awfully his boots sound on the uncarpeted floor. The croquet mallet becomes a maul in his fingers, and his tongue is the tongue of an ox. His

affliction becomes doubly great when the town girl's brother or "feller" comes out to take her home. Then he longs for a cyclone or a fire to bring out his hidden excellences — some emergency that might show that he could do things which "that dude" could n't.

Another contrast, but of a different sort, occurs when the preacher stops in at supper time and stays all night. The hired man feels a sort of contempt for "that fine-haired feller with such a stand-in with the women folks," especially when he sees that he does n't half know how to unhitch his horse. But with his contempt comes a feeling of dread, dread of that awful time just before going to bed, when the preacher is to have his innings. During the whole evening there is a cloud over the family. No one ventures even a whispered joke in the corner, and the talk invariably takes an uninteresting turn. Finally comes the expected hitch in the conversation, the head of the family coughs, clears his throat twice, then comes out with the inevitable, "Brother X, will you read?" The hired man scarcely hears the voice of the minister, he thinks only of the crisis to come at the reading's end. Will he be expected to kneel, or, being a hired man, will just bowing the head a little suffice? Finally the minister's voice ceases, and the women of the family follow the visitor's example and kneel, squarely facing their chairs, while the men assume various awkward compromises between inclination and duty. The hired man hesitates an instant, then, yielding to the power of example, lets one knee slip down from his chair to the floor, and thus painfully waits until the blessing of Heaven, having been invoked by the speaker on the nation, the state, this particular farm, the family in general, and each member of it in particular, is finally directed to "the servant within thy house and his well-being," and the welcome "amen" releases this functionary from his cramped position. The preacher makes some commonplace remark to unlimber the minds of the family, a remark which somehow suggests to the hired man, as he bolts thankfully to his bedroom, the satisfaction of a surgeon after a successful operation. I wonder if this ceremony was followed by the preacher of twenty years ago in response to a feeling of duty, merely, or whether he

ever believed that he was doing missionary work and that the temporary altars which he set nightly up would endure in the face of long-standing family customs.

But to return to the more strictly economic side of our work, we turn to Chapter V, The Mobility of the Hired Man. In this country, where land is comparatively cheap, and money readily obtained, on presentation of proper security, the way is open for the hired man to emerge from the province of labor into that of capital. If he is a fairly good farmer, he can become a renter, receiving a share of the crop in return for his service in tilling the land. Or he may take up a piece of raw land, marry his former employer's eldest daughter, settle down in a sod or log dwelling, and, soon surrounding himself with a family and a mortgage of his own, become himself an employer of hired men.

These considerations may make more credible the statement contained in my concluding chapter on Means of Improving the Condition of the Hired Man; for my conclusion is so at variance with that usually found at the close of sociological works that I feel that I must present all the evidence if I am to make my readers agree with me. My position is in brief that, considering the numerous joys of the American farm laborer — his small expense account, his freedom from all perplexities as to what to do with his surplus time, his high social status, his religious privileges, and finally the ease with which he can rise into a higher economic plane — the condition of the hired man cannot be improved. Since, then, I present a healthy subject, and deal with a problem in social physiology rather than social pathology, I may dispense with the materia medica which commonly forms a considerable part of treatises of this kind. The advantage is twofold. The reader is spared an enumeration of the various sociological sedatives, stimulants, and narcotics usually prescribed, and I am spared the labor of further writing and may bring my treatise to a close.

THE ENGLISH AGRICULTURAL LABOURER

By Sir Rider Haggard

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THE second great danger that threatens English husbandry is the lack of labour, with the comparatively high price and indifferent quality of what remains. As to the conditions of the supply in those counties of which these volumes treat, I must refer the reader to what I have already written. Generally, however, it may be said that the question is most pressing in the south of England, or near to seaport and manufacturing towns, and least so in some of the eastern and more northerly counties. In certain districts, also, labour has been much more plentiful of late owing to the slackness of trade, which has thrown a number of loose hands out of work in the towns or in brick works and building centres.

The real peril both to agriculture and, what is even more important, to the country at large lies, however, in the fact that the supply is being cut at its source. The results of my inquiries on this point are even worse than I feared. Everywhere the young men and women are leaving the villages where they were born and flocking into the towns. As has here been shown again and again, it is now common for only the dullards, the vicious, or the wastrels to stay upon the land, because they are unfitted for any other life; and it is this indifferent remnant who will be the parents of the next generation of rural Englishmen. It must be remembered that the census returns do not tell the whole truth of this matter, since very often rural districts include large townships. Also the elderly folk and many young children still remain in the villages, the latter to be reared up at the expense of the agricultural community for the service of the cities. As they mature into the fulness of manhood or womanhood they leave the home and are seen no more.

This is certain — for I have noted it several times — some parts of England are becoming almost as lonesome as the veld of Africa. There "the highways lie waste, the wayfaring man ceaseth." The farm labourer is looked down upon, especially by young women of his own class, and consequently looks down upon himself. He is at the very bottom of the social scale. Feeling this, and having no hope for the future, nowadays he does not, in the majority of instances, even take the trouble to master his business. He will not learn the old finer arts of husbandry; too often he does as little as he can, and does that little ill.

Farming in this country is no longer what it was. In all parts of England the land is going more and more to grass, which means, of course, that fewer men are needed for its working; while in many places the tendency is towards the division of farms, until they reach a size that can conveniently be managed by a man with the help of his own children. Also there are always a certain number of tramps or drifters who can be hired, to say nothing of the industrious Irishmen that visit some of the counties in large numbers.

Therefore, great and damaging as is the present dearth of agricultural labour, my own opinion is that more or less it will be met in this way or in that, chiefly by the division of holdings, the increased use of machinery, the abandonment of the higher class of farming and of dairies which necessitate Sunday milking, and the laying away of all but the best lands to grass. In short, the lack of men will not kill our husbandry, it will only change its character for the worse, with the result that much of our soil in the future may produce perhaps one-half of what it used to produce, and, say, one-third of what it could be made to produce.

But behind the agricultural question lies the national question. What will be the result of this desertion of the countryside and of the crowding of its denizens into cities? That is a point upon which it would be easy to indulge in strong words. The evils are known, and little imagination is needed to enable a writer to paint their disastrous consequence. I will, however, content myself with a moderate statement. It can mean nothing less than the progressive deterioration of the race. In the absence of new

conditions which cannot be foreseen, if unchecked, it may in the end mean the ruin of the race.

Owing principally to the lowness of prices, from whatever cause arising, and the lack of labour, I take it to be proved then that in the majority of districts English agriculture is a failing industry, although at present, in the absence of serious war and want, this gradual failure does not appear materially to affect the general prosperity of the nation. Yet I maintain it is affecting it, not only by the lessening of a home-grown food supply which might be vital in the case of a European struggle, but in an even more deadly fashion by the withdrawal of the best of its population from the wholesome land into cities which are not wholesome for mind or body.

Will this movement stop? Many think so. The hopes of farmers are built for the most part on a belief, which I find to be very widespread, that the trade of the country is threatened with imminent disaster which will send people back to the land, or at least prevent the migration of any more of them to the towns. For my own part I do not believe that anything short of actual starvation will cause those who have become accustomed to a city life — or, still more, their children — to return to labour on the soil even if they were fitted so to do. It is, however, possible that those who remain on that soil might be prevented from deserting it by the difficulty of obtaining remunerative employment in the towns. As the demand for robust country folk is at present enormous and increasing in every branch of labour — including the army, the railways, and the police — that case is, however, purely hypothetical. In this connection it must be remembered that the unemployed, of whom we hear so much, are not strong-limbed, sound-minded rustics, but townsmen of the second or third generation who, whatever else they can do, cannot or will not labour with their bodies. Therefore it comes to this — while there is a demand and trade flourishes the exodus must continue; and at present, with some exceptions, the demand is active and trade does flourish.

The reader may ask, Why should it continue? There are several answers. Chiefly it is a matter of wages. More money can

be earned in the towns; and even if this means no real advantage, — if the extra cash is more than absorbed in the extra expenses, — the average man likes to have the handling of money. He does not think of the rent of the squalid rooms, of the cost of the tramcars and the music halls; he does not reck of the time when he will begin to grow old and be pushed out of his place by some new-comer from the land. Yonder it is thirty shillings; here it is only eighteen. That is what he remembers. So he goes to accomplish his destiny, whatever it may be.

But it is not solely a question of wages; he and his wife seek the change and the excitement of the streets. Nature has little meaning for most of them, and no charms; but they love a gas lamp. Nature, in my experience, only appeals to the truly educated. Our boasted system of education seems to make it detestable — a thing to flee from. Lastly, in towns, there is a chance of rising; but in the country, for nineteen out of twenty, there is no hope that they will become farmers on their own account. So the countryman chooses the town, and as a consequence the character of Englishmen appears to be changing, not — as those who have observed certain recent scenes, at Waterloo Station and elsewhere, may reflect — entirely for the better.

Before speaking of possible remedies for evils which are generally admitted to exist, I wish to allude very briefly to the condition of those engaged in agriculture, as I have found it to be. Of the three classes connected with the land — the landowner, the tenant farmer, and the labourer — I believe that, taking the country through, the owner has suffered most. In many counties, such as Essex, Hertfordshire, Norfolk, and Suffolk, there is often nothing at all left for him after the various expenses have been met, whereas, if it is in any way encumbered, landed property is as a millstone round his neck. In such counties the possession of land is becoming, or has already become, a luxury for rich taste for sport. Than this no state of affairs can be more unwholesome or unnatural; the land should support men, not men the land. Also there are more acres than there are rich folk to buy them.

In some parts of England, however, the landlords are still living on their rents, but where they have no other resource, in

the vast majority of instances they are much crippled. Against this class every hand is raised. If a tenant is pinched, whom does he neglect to pay — the tradesman, the lawyer, the banker? No, the landlord. If there is trouble about the collection of tithe, on whose shoulders is the burden thrust by Parliament? Those of the landlord. On whom do the death-duties fall the heaviest? The landlord, who cannot discharge them in kind, and often enough has nothing else out of which they may be satisfied. And so forth. Meanwhile the upkeep of estates is costlier than ever it was, since tenants require much in these latter days.

The farmers, with certain exceptions, in my judgment, do no more than make a hard living, and in many instances they are actually losing capital. Still, one fact must be remembered which farmers themselves are apt to forget — they do, for the most part, live, and, in comparison with the rest of the world, not at all unpleasantly. They are independent and, where the gentry are few, rule the countryside; moreover with their hire is thrown in a house, which often in a town would cost them at least fifty pounds a year, that must be kept in repair by the owner. Further their expenses need be but very small, since a farm actually produces much that a farmer's family consumes, and, for the most part, they are by no means lavish in their subscriptions, either to public or private objects. These are advantages which are well understood by many townsmen of the shopkeeping and professional classes. It is common to find in some districts that to a considerable extent the demand for farms, especially for small farms, proceeds from such folk who have saved money and desire to end their days in the country. They know that if they make nothing they will actually lose little on, say, a hundred acres of land, of which the buildings must be repaired by somebody else, and that the life is wholesome, with many incidental advantages. It is often for these reasons that in most counties there is still a demand for holdings at the present reduced rents. Also farmers can only farm; they have no other resource or occupation, so they cling to their business until the end, whatever that may be, although often enough they would do better to invest their inherited capital and be content to exist upon the interest.

Large holdings, however, which require a great deal of capital, are everywhere becoming hard to let, since, save in very exceptional instances, farmers cannot hope even to do more than pay their rent and make a livelihood. The old days when they could save have gone by; indeed, I believe that a great deal of money which was made out of the land in the past is slowly being dissipated upon it in the present.

In short, the industry, speaking generally, is decaying; but it still endures, in spite of bad prices, labour troubles, and indifferent seasons. How long it will endure in the absence of some marked change for the better is another question. Such a change the harvest of 1902 with English wheat at less than 25 s. the quarter, a price at which it cannot pay to grow, certainly has not produced. That question is one which time alone can answer, but whatever happens doubtless the best lands will always find tenants.

To come to the third class,— that of the labouring men,— undeniably they are more prosperous today than ever they have been before. Employment is plentiful; wages, by comparison, are high, — in some places higher than the land can afford to pay, — food and other necessaries are very cheap.

In face of these advantages, however, the rural labourer has never been more discontented than he is at present. That, in his own degree, he is doing the best of the three great classes connected with the land does not appease him in the least. The diffusion of newspapers, the system of board school education, and the restless spirit of our age have changed him, so that nowadays it is his main ambition to escape from the soil where he was bred and try his fortune in the cities. This is not wonderful, for there are high wages, company, and amusement, with shorter hours of work. Moreover, on the land he has no prospects: a labourer he is, and in ninety-nine cases out of a hundred a labourer he must remain. Lastly, in many instances, his cottage accommodation is very bad; indeed I have found wretched and insufficient dwellings to be a great factor in the hastening of the rural exodus; and he forgets that in the town it will probably be worse. So he goes, leaving behind him half-tilled fields and shrinking hamlets.

Moreover, even of those young men who remain, but few care to become masters of their work. Here is an instance of which I have just been told, in September, 1902. The technical committee of the Norfolk County Council allotted to Ditchingham and a group of three or four other parishes £9 to be given in prizes at a ploughing competition. From the whole parish of Ditchingham with its population of about 1100 but one man has entered — a servant of my own — and from the group of parishes, I am informed, not a single lad is forthcoming, although a sum of £3 was set aside to be given as prizes in the boys' ploughing class. The fact is, of course, that the youth of this, as of other districts, does not wish to learn to plough, even when bribed so to do with prizes, and that here, before long, ploughmen, or any skilled labourers, will, to all appearances, be scarce indeed.

To sum up the real causes of this ominous migration of the blood and sinew of the race: they are, I take it, first, that the peasant has nothing to tie him to the land, on which he is a wage-earner without outlook; secondly, our system of education does not allow him to come in actual contact with that land until he is too old to learn to love it; thirdly, in many cases, proper homes with good gardens are not provided for him in the villages. Up to the seventeenth century I believe that most of the English soil was owned by small yeomen, and even by peasants, who in the beginning acquired it on the condition of the rendering of certain services to a feudal lord, which ultimately were compounded for by a money fine, thus turning them into copyholders. Even the humblest cottager had his four acres of grass or garden about his dwelling.

In time all this was changed: the small-holders were bought out and sank into a condition of great misery, being forced to live like swine, and as labourers to take whatever wage was flung to them. Doubtless they wished to depart in those days, but there was nowhere to go, and no means of going. So they stayed until, some thirty years since, their eyes were opened.

What will suffice to abate the evil — for it is a great and growing evil? Better wages? In most cases and localities they are impossible unless the prices of farm products alter very materially.

Better prospects and cottages? How are these to be provided? I will try to answer the question by the help of the experience which I have gathered. It has been said of me that I am "a small-holdings man," that I want "to cut up England into small-holdings." Well, I am a strong believer in such holdings, with sundry important limitations. Who would not be when he has found, as undoubtedly I have (of course with exceptions), that wherever small-holdings exist in England there is comparative prosperity, great love of the soil, and a desire to cultivate it, an increasing as compared with a diminishing population, a large production of children as compared, at any rate in many instances, with a small production of children, and a considerable addition to the supply of local labour?

But now come the limitations. I desire to state quite clearly I do not believe that small-holdings can be artificially created at this period of our history. The desire and demand for them must spring up among the population; they cannot be forced upon the population with any prospect of success. To take an example, it would be useless for the government to provide, say, fifty millions of money and bid a department to create small-holdings to that value. It would only lose most of its money, and in the end find many of the holdings on its hands. Also various districts in England, owing to local conditions of soil, markets, and lack of means of communication, are not suitable to this class of occupier or owner at the present low values of agricultural produce.

Still, in every county there are men — more, probably, than any one imagines — who desire small-holdings, who would work them to great advantage to themselves and the State, and, by their example, would encourage others to follow in their steps. Parliament, recognizing the existence of such men, has, it is true, already passed an act — the Small-Holdings Act of 1892 — designed to assist them. But the administration of that law has been left in the hands of the county councils, who, with the exception of those of Worcestershire, of Cambridgeshire on a very small scale, and, I think, of one other county — at least I know of no others — have allowed its excellent provisions to become a dead letter. Unless, therefore, the councils can be moved to take

action, or the administration of the act is transferred to the Board of Agriculture — a course which would have some disadvantages — for all practical purposes it may be regarded as non-existent. How, then, can these men be helped? By direct government aid? I think not. Such aid pauperises and is foreign to our character and traditions. Indirect aid, which enables the individual to help himself, is another matter. I propose that it should take this form. First, the extension of the provisions of the Housing of the Working Classes Act of 1890, to enable public bodies and landowners to borrow money from the treasury, to whatever extent they may wish, for the erection of both cottages and farm buildings sufficient for the purposes of small-holdings, at a more reasonable rate of interest than is at present charged by the loan commissioners. Such interest to be repayable over a term of sixty instead of forty years, as at present, and to include a provision for a sinking fund which would automatically extinguish the debt at the termination of that period. As it is, the great majority of landowners are absolutely unable to afford to put up cottages and outbuildings, even when they so desire, without which, small-holdings can seldom be multiplied.

But it is undoubtedly to the interest of the nation that these should be multiplied, and still more so that the cottage accommodation of the working classes in rural districts should be improved. Surely it would not be beyond the resources of financial experts to formulate a scheme under which the necessary funds might be forthcoming without actual loss to the treasury, or, at the worst, at a loss so small that it should not be allowed to weigh against the advantage gained.

Of course I know the answer — that owing to the cost of our wars the government itself must pay about 3 per cent for money. If this is held to be conclusive, there is nothing more to be said. Still, I wish to point out that when millions are so easily forthcoming for enterprises of the character of the Uganda Railway, which is not likely to prove a remunerative investment, or to assist Boers, who have brought their troubles on their own heads, it is hard that help should be withheld from such home schemes as I have suggested on the ground that, commercially, they might not pay.

But, it may be said, supposing that the government were to make such advances, where is the little farmer's working capital to come from? Is the government to lend him that also? This is not my notion. Some of it he must find out of his own means or savings; the rest he should be able to borrow, not from the government, but from co-operative credit banks, to be established and controlled by the Board of Agriculture, working, perhaps, in conjunction with, or through the existing co-operative banks association. I believe firmly, that under proper and sympathetic management they might prove a very powerful factor in the resurrection of the departed class of British yeomen, and therefore in keeping population on the land. The splendid work they have done on the Continent is known to all. Why should it not be repeated in England?

Still, such banks would need a powerful and authoritative start, and that start, I submit with humility, should be given by the government, acting through the Board of Agriculture. Some money might be wanted at the beginning, possibly half a million; but if we may judge by the Continental experience, given good direction, there is little fear that one halfpenny of this advance would be lost to the treasury. From these banks deserving men, whom their fellows approve and are responsible for, could borrow on the well-known and tested system, with the result, I am convinced, that numbers who now have no means of so doing would be able to establish themselves as small farmers. Not many, it is true, could buy their land; that, where it was desired, might come later with their success.

Indeed, although I should like to see the land in more hands than it is at present, I think that in England the small-holder is, on the whole, better off as a tenant than as an owner. In the first case his capital is all available to stock his farm, and though an owner is free from rent, too often, as I have shown in this work, he has to meet a heavier burden in the shape of interest on money borrowed upon the security of his freehold. This subject might be written of at much greater length, but I leave it here.

Before doing so, however, I wish to make it quite clear that I do not desire that all England should be cut up into these little

tenancies or ownerships (as once much of it must have been), since England is large, and in it there is room for every kind of estate and holding. I do, however, desire to see small-holdings indefinitely multiplied, for they produce a splendid class of men, of which soon the country is likely to be much in need. Moreover, it looks very much as though ere long there may be but two payable classes of farming: (1) that which is worked by capitalists on a large scale, with the aid of machinery for arable, and of great herds of stock for pastoral lands; (2) that which is worked by the small-holder on suitable land and in the near neighbourhood of markets, with the aid of his own hands and family.

Of this, at least, I am almost sure. Men will not return from, they will not even cease to go to the towns, in order to become day labourers on the land. But they will, in many instances, cling to that land if their lives there can be made more pleasant, especially if they can be given the interest of property in or on its acres. In short, they will do for their own what they will not do for another's, even though the actual gain be small and the life hard. So, at least, I have found it in many places.

There remains the question of rural education. It is generally admitted, — myself I have heard it from the mouths of many competent witnesses, as readers of this book will know, — that our present system is a town system, and tends to turn people to the towns. Agricultural classes have, it is true, been introduced, with lessons in botany and other expedients, but, as I gather, with small appreciable effect. The lad who is expected to deal with the land and with animals ought to become practically acquainted with them before he is twelve years old, otherwise, in the great majority of cases, he will dislike the one and fear the other. How, then, is this to be effected? The answer is, as in the case of the credit banks, by going abroad for an example.

In various Continental countries — also, I believe, in some of the Australasian colonies — I understand that the school children are allowed out to work on the land in summer and kept to their books in winter. Why cannot this system, with whatever local modifications may be found necessary, be adopted in England? Some may reply, Because the country does not wish its youth to be

kept in the rural districts; it desires that they should be attracted to the towns, there to supply cheap labor. If that is so, here, again, nothing more can be said, except that in the opinion of many this is the shortest road to national disaster.

I urge with all earnestness that the matter is one which needs impartial investigation. Educational theories may be pushed too far, especially when the theorists and the teachers are townsfolk unacquainted with the needs and conditions of the land, and quite careless or ignorant of the ultimate issues of its impoverishment and depopulation.

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To recapitulate, then, as one who has made an earnest and prolonged study of these questions, on behalf of the thousands who think as I do, I ask six things of the government, not only in the interests of rural England, but of Great Britain as a whole:

1. That it will extend the provisions of the Housing of the Working Classes Act in some such fashion as is suggested above.

2. That it will place a minimum sum of half a million at the disposal of the Board of Agriculture to be, as regards one moiety, loaned out by the said board to co-operative credit societies working under its control or supervision, in order to enable them to start, or to extend their operations. As regards the other moiety, to be employed for the advance of moneys upon such terms as may be found safe and reasonable, to be used in the establishment in suitable places of co-operative milk and butter factories.

3. That in view of the very serious state of affairs revealed by the report of the Royal Commission on Local Taxation, and the ever-increasing burden which is being heaped on real property that grows daily less able to bear it, the government will at once introduce legislation to enforce the conclusions of the said report. This might be done by charging sums spent on account of the nation to the nation at large, instead of leaving them to be borne to the extent of, I believe, over 82 per cent by the owners and occupiers of real property.

4. That it will deal with the questions, among others, of the abolition of copyhold and of the cheapening of land transfer.

5. That it will greatly strengthen the powers and position of the Board of Agriculture and its president.

6. (By far the greatest and most far-reaching of the remedies that I have to propose.) That so soon as may be feasible it will establish an agricultural post, to be worked as a branch of the present post office and, as nearly as proves practicable, upon the lines of the existing parcel post. Packages to be carried by this post not to exceed one hundred pounds in weight until the scheme is further developed in a way of which I shall speak presently. All classes of agricultural goods, however, including milk in churns, to be conveyed by the said post at the lowest rates that are found possible without loss to the country. Should the experiment prove both useful and self-supporting, as I am convinced that it would ultimately do, it might in the future be much extended so as to deal with goods in bulk by means of traction-trains which would collect the said goods at local receiving stations and deliver them in the large towns, or at any other receiving station.

Such traction-trains, I believe, could be worked very economically. Thus, Mr. B. J. Diplock has invented a new traction engine running on substitutes for ordinary wheels that he calls "pedrails," which, it is said, after allowing for depreciation, repairs, other expenses, etc., will transport goods at 75 per cent less than the rates commonly charged by English railways. For the details of what seems to me, after inspecting the models, to be a very remarkable invention, I must refer the reader to Mr. Diplock's recent book, "A New System of Heavy Goods Transport on Common Roads" (Longmans). Whether or no this scheme will prove a commercial and practical success, of course I cannot say; but even if it does not, without doubt others will appear. My point is that eventually an agricultural post such as I propose, might by the aid of road traction be so extended as to deal with produce in bulk.

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When we turn to the question of the decrease in the inhabitants of English rural districts, it is to find ourselves confronted with some startling figures. I read that in 1851 the agricultural

labourers of England and Wales numbered 1,253,800 and that in 1891 they had shrunk to about 780,700. What the census of 1901 shows their number to be I do not yet know, but I shall be much surprised if it records any advance. Taking it on the 1891 basis, however, it would seem that whereas between 1851 and 1891 the population of England and Wales had increased by about a half, its agricultural inhabitants during this same period had actually decreased by over one-third, with the result that whereas in 1891 the urban districts could show a total of about 25,000,000 people, the rural districts held only about 7,500,000, that is, some 23 per cent of the population, as against 77 per cent living in towns or their immediate neighborhood. These figures are very eloquent and very ominous, especially if a careful analysis of those of the last census should prove them to be progressive in the same directions.

In days that are quite recent, as the remarkable Necton document quoted in my chapter on Norfolk shows, folk were haunted by an absolute terror of the over-peopling of the rural districts. Now they suffer from a very different fear. The plethoric population-bogey of 1830 has been replaced by the lean exodus-skeleton of 1902. People are deserting the villages wholesale, leaving behind them the mentally incompetent and the physically unfit; nor, at any rate in many parts of England, — although in this matter East Anglia is perhaps better off than are most other districts, — does the steady flow to the cities show signs of ceasing. Yet — and this is one of the strangest circumstances connected with the movement — those cities whither they go are full of misery. Disease, wretchedness, the last extremes of want, and the ultimate extinction of their families will be the lot of at least a large proportion of these immigrants. Has not this been shown by Mr. Rowntree and others?

On the other hand, low as the wages are, it is not too much to say that in the country, or at least in that large area of it with which I am acquainted, there is in practice but little real poverty. Cases of misfortune there are, and always must be, together with cases of accidents and cases — of these a great number — where the drunkenness or other ill-behaviour of the breadwinner has

brought whole families to wreck. But want, actual want of food for the stomach, of clothing for the back, and of shelter for the head, such as stalks abroad through the poorer parts of great cities, is rare today in rural England. There are those who for this cause or for that fall into its clutches but who can generally find a friend to help them, in nine cases out of ten the despised parson or the much-abused squire.

I know no better test of well-being than the appearance of the children of a locality. Now I venture to assert that any observer who stood at the gates of Ditchingham School, or of those of some neighbouring parish, and watched the pupils coming out to play, would find them as well and sufficiently clothed, as well fed, and in general of as happy and healthy an appearance, as it is possible for children of their class to be. If, however, he took the train to some great city and repeated his observations at the door of a large board school, would he be able to say as much? In short, even for the very poorest, life in the country has not those horrors that in towns must be its constant companion. We complain, and rightly, of the state of our cottages; but after all, how many cases of consumption are there in them, and how, for young or old, do the rural tables of mortality compare with those of towns? Is it possible in a village for such a thing as this to happen? A lady known to the writer was district-visiting, I think in London, and in a tenement of one room found a woman nursing some children sick with I forget what complaint. Presently this poor creature opened the door of a cupboard and showed her the bodies of two more of her offspring which she had thrust away thus because there was nowhere else to put them.

Still for such homes as these, and perhaps to fates as dreadful, people flock from their wholesome, happy villages, where their labour at least brings health and in most cases sufficiency, to the towns where they believe that they are certain of higher wages and more amusement. A while ago I met a man, evidently an agricultural labourer, walking down the Strand and literally weeping. It appeared on investigation that he had come up with his family from some rural district in the hope of "bettering" himself. The result was that at the time of our meeting he and

they were learning by sharp experience the meaning of the word starvation. I have often wondered what became of that man, or if he took my advice to get him back to the country as quickly as he might.

But, as I have said, such examples do not deter those who want to go, who are young and strong and forget the day when they will be grey-headed and turned from door to door. They think that they will be among the fortunate; that they will not find themselves sick and friendless in the ward of a London hospital; that their children will develop no disease in the crowded slums. Or perhaps they do not think even so much as this. They are weary of their lack of outlook and of working the fields that their forefathers worked before them for hundreds of years, and do not reflect that in this pursuit, humble as it seems, there is in truth great dignity; weary also of the control of village opinion and of the dulness of village life. Education has taught them to dislike manual labour, which they look down on; while newspapers, and friends who have been successful there, tell them of the glories and high wages of the town, of the music halls and the beautiful processions.

So they go, and it is hard to blame them. But what will be the result upon England at large — indeed what is the result already? Again, I ask, can it be denied that the national temperament is undergoing modifications subtle perhaps, but none the less profound? To "maffick" is a very modern verb, but one of which the significance is daily widening. Moreover, the physique deteriorates. This was a fact that came home to any who, after the country-bred yeomen were exhausted, took the trouble to compare with them the crowds of town-reared men that presented themselves at the London recruiting offices to volunteer for service in South Africa. The intelligence too is changed; it is apt no longer to consider or appreciate natural things, but by preference dwells on and occupies itself with those more artificial joys and needs which are the creation of civilized, money- and pleasure-seeking man.

I am convinced — and this is a very important national aspect of the question — that most of our reverses during the recent

war were due to the pitting of town-bred bodies and intelligences, both of officers and men, against country-bred bodies and intelligences. We laugh at the Boer for his rude manners and his rusticity, but therein lies a strength which if he and his people are wise they will not exchange for all the gold and gems in Africa and all the most exquisite refinements of Europe. If they can resist those temptations (which for our sake it is to be hoped that they will not do); if they can continue to be content to live roughly upon their farms and produce as many children as nature gives them, then I am sure — unless we British change our ways — that whatever flag flies over it, within two generations its inhabitants of Dutch blood will, in fact, rule South Africa. Moreover, having that vast country in which to develop, within ten generations they will, I believe, be one of the great powers of the world. For in Africa the Englishman does what he does in Britain, forsakes his farm for the city, where there is more life, and more money to be made.

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I have now tried to set forth generally what has been already chronicled in much detail in these volumes, that the agricultural interests in England are in no flourishing condition. I have pointed out that, chiefly owing to the low wage which is all that the land can pay them and their lack of prospects, the labouring classes are in great numbers deserting the country for the towns, where they hope, often vainly enough, to better their fortunes. I have shown also in these pages that the race of yeomen is becoming extinct, and that of the owners of land very much impoverished. Further I have drawn the conclusion that these unnatural developments are of most evil omen for the welfare of our country, and have ventured to suggest several remedies (outside of protection, which I look upon as impracticable), whereby they may be, if not arrested, at the least palliated. Can this be done? I can only answer that I think so — that at least as much has been done in other lands.

V. THE FARMER'S BUSINESS

SOME IMPORTANT FACTORS FOR SUCCESS IN GENERAL FARMING AND IN DAIRY FARMING

By Professor G. F. Warren, Cornell University

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INTRODUCTION

FOR eight years the Department of Farm Management has been studying farms in order to learn why some farms pay better than others. Records have been obtained from 6 townships in Tompkins County, 5 townships in northern Livingston County, and 5 townships in Jefferson County. Records have also been obtained for a considerable number of farms in different parts of the state, in all 2743 farms. In addition to these records used for systematic study, probably over 1000 records have been made out for their home farms by students in this department. These have not been tabulated, but are in accord with the principles here given. Similar work has been done in 14 other states. So far as the work in other states has been published and so far as the writer has heard it discussed in lectures, the same principles are shown to apply.

Distinction between a successful farm and a successful farmer. Profitable farms are usually not readily told by casual observation. A farmer who is not in debt may have a well-kept place and be living well, but not be making interest on his capital. His farm may make a good home, but it cannot be called a good business unless it pays interest on the capital invested and good wages for the farmer's labor. Another farmer who is in debt for his place and who has to pay interest may be running a much more successful farm and yet have little money left over for good living.

Not infrequently the owner of a very profitable farm fails to accumulate money. On the other hand, the owner of a farm that does not pay any labor income may save money.

The distinction between a successful farm and a successful farmer is well illustrated by a farmer in one of the counties studied. The farm is very successful, but the owner drinks and wastes all that he gets. The neighbors do not consider his farm to be successful, because the owner is not accumulating any money, and they do not distinguish closely between a profitable farm and a thrifty individual. This man's farm is very successful. It is no fault of the system of farming that the money is wasted. The farm produces the money. In other cases, a farmer may spend his profits in educating his children and fail to accumulate money as fast as a neighbor who makes less from his farm but who saves all he gets.

Financial success for an individual depends on spending less than one receives. A farm is a financial success when it pays a good rate of interest on the capital invested in addition to good wages to the operator.

A way of measuring the success of a farm. Labor income defined. In order to compare different farms it is necessary to have a way of measuring profit. The most accurate way of comparing is on the basis of labor income, or farmer's wages. Labor income is the amount of money that the farmer has left after paying all business expenses of the farm and deducting 5 per cent for interest on the money invested in the farm business.

An illustration of the method of figuring may make the point clear. The averages for farms in Jefferson County are shown in Table 1. The average capital on these farms was $9006. This includes land, buildings, stock, machinery, tools, feed and seed on April 1, and cash to run the farm. The average receipts for the year were $1890. Any unsold products or increase in animals is counted as a receipt. The average expenses were $735. This includes all business or farm expenses. It does not include any personal expenses, but includes the value of board furnished to hired help.

TABLE 1. AVERAGES. 670 FARMS, JEFFERSON COUNTY, NEW YORK

Average capital	$9006
Average receipts	1890
Average business expenses	735
Receipts less expenses	1155
Interest at 5 per cent	450
Income from unpaid labor	705
Value of unpaid labor except owner's	96
Labor income	609

The difference between receipts and expenses averaged $1155. This $1155 was earned by the farmer's money and the work of the family. Money can readily be loaned on farm mortgages at 5 per cent. Hence, only $705 can be said to have been earned by the labor of the farmer and his family. The unpaid farm labor by members of the family would have cost about $96 if it had been hired, therefore the average farmer really earned $609 as wages for his own work. This we call his labor income. Hired men in this region get about $400, house rent, and some farm products. If a farmer's labor income is less than this, he may as well lend his money and hire out.

The term "labor income" is readily understood by farmers, because it is directly comparable with hired man's wages when the hired man gets a house, a garden, and some farm products. It is not so readily understood by persons in the city. Such persons usually assume that the purpose of this work is to show that farmers either are, or are not, getting rich too fast. The purpose of this work is to determine why some farms pay better than others. The aim is to compare farms with farms, not to compare farms with the city. If one wished to make such a comparison he should have no more difficulty in comparing labor income with city wages than he has in comparing farm wages for married men with city wages. In either case, the person on the farm receives house rent and some farm products in addition to the labor income, or wages. The object of calculating labor income

is to have a basis for comparing different farms. It serves this purpose most excellently.[1]

The man as a factor in success. It is frequently stated that success depends on the man. To some persons this seems a full and satisfactory explanation. But it explains nothing. It merely dodges the question. Success cannot come from *merely being* a genius. Success comes from *doing* certain things. The farmer does not sell himself. He sells milk, potatoes, hay, apples. It is such things as cost of production, amount sold, and price that determine his profits. The only way that a good farmer can express himself is by *doing* certain things. These things are fairly easy of analysis. If one farmer sprays his apples and another does not, it is the arsenic that kills the worms. Any other person can duplicate the result by spraying in the same way. If one farmer succeeds because he has better cows than another, this success can be duplicated. Certainly some persons will succeed where others fail, because they do things differently. Just what are the differences in method of procedure?

Many of the limiting factors are natural forces over which the farmer has little, if any, control. Other limiting factors that are not personality are prices, roads, freight rates, capital, and the like. These limit what can be done by the best, as well as by the poorest, farmer. With large numbers of records, it is possible to determine with a fair degree of accuracy the influence that each of the different factors has on profits. Any part of a farmer's success that is due to his acts can as readily be determined when large numbers of farms are studied. (See diagram, p. 585, and

[1] Business men sometimes question why the value of the farmer's labor is not deducted and interest calculated, rather than deducting interest and calculating labor. In our first two years of work, we made calculations both ways. But with such small investments as some farmers have, the interest figure often means nothing. If a farmer has a capital of $2000 and makes $600 above his farm expenses, his labor income is $500. If we assume that his labor is worth $400 at farm wages, then he has made 10 per cent interest. Another farmer with $20,000 capital, whose farm receipts exceed the expenses by $2000, makes a labor income of $1000. If the labor that he does is considered to be worth $400, he makes 8 per cent interest. If all farmers had capitals of $20,000 to $50,000, so that interest would be a larger item than labor, the interest method of figuring might be considered. Another reason why labor income is preferable is that we know what money is worth. It is much more difficult to assign a value to the farmer's labor.

discussion of it.) The confusion is increased by failure to distinguish between a successful farm and a successful individual, as has already been pointed out.

What are the differences in natural conditions, and what are the ways in which the organization and management of successful farms differ from the natural advantages and management of less successful ones?

Factors affecting profits. There are hundreds of things that have some effect on profits, but many of these can make only a slight difference. There are many other factors that set absolute limits to the profits. Of these important factors, a few stand out as the prominent ones on the vast majority of farms. From a long study of this question, it is found that the factors that most frequently determine whether the profits are poor, good, or excellent are the size of the business, the diversity of the business, the crop yields, and the production per animal. For general farms, the labor income can be placed in the correct group in about 80 per cent of the cases, if one knows the area of crops grown, the yields of these crops, the receipts per cow or other important animal, and the percentage of the total receipts that come from cash crops. In other words, these four are the most important factors that control profits in farming.

Of two farms that have practically the same area of crops, same yields, same receipts per cow, and same proportion of receipts from animals, one may have a labor income of $600 and the other $800. Many other minor factors produce these small variations. Rarely do we find farms that are alike in the four factors mentioned above and that have such differences as $600 and $2000 in labor income. There are, of course, many factors that might cause such a difference, but in actual experience the fact is that they do not often do it. None of these conclusions were derived by theory. They were found by sorting records of farms in many ways and examining the results. The writer would have arrived at entirely different conclusions from theory. It must also be remembered that the records include all farms in the regions studied, with the exceptions noted on page 584. They are not selected in any way.

SIZE OF BUSINESS

Ways of measuring size. There are many ways of measuring size of business. Farms may be compared as to the amount of capital invested, number of men kept, number of cows or other animals, number of work animals, acres of land, or acres of crops grown. So long as we are dealing with fairly uniform conditions, each of these comparisons gives about the same average results. If comparisons are made between widely different types of farming, as between truck growing and general farming, then capital is the best measure of size.

Relation of capital to profits. Very few farmers who use less than $5000 worth of capital are making good labor incomes. With a fair amount of capital, it is easier to make wages and interest on the larger capital than to make wages and the smaller interest on a small capital. The capital need not all be owned. Part or all of the land may be rented, or the land may be owned but mortgaged. Results in Bulletin 295 of this station agree with this, as they do with all the results in this bulletin. The relation of capital to profits is shown by Table 2 below, and Tables 3 and 4 on the next page.

TABLE 2. CAPITAL RELATED TO LABOR INCOME. 578 FARMS, NORTHERN LIVINGSTON COUNTY, NEW YORK

Capital	Number of Farms	Average Labor Income
$5000 or less	87	$291
$5001–$7500	80	407
$7501–$10,000	112	480
$10,001–$15,000	164	769
$15,001–$20,000	62	1001
$20,001–$30,000	55	1062
Over $30,000	18	1691

The reason why tenants and part owners make more than owners, as shown in Table 4, is because with a given capital they have a larger business. A tenant who has $3000 may rent a farm worth $15,000 and be running a business many times larger than

can an owner who has only $3000. Any factor that enables the farm operator to get control of more capital results in much larger profits on the average.

TABLE 3. RELATION OF CAPITAL TO PROFITS. 578 FARMS, NORTHERN LIVINGSTON COUNTY, NEW YORK

Capital	Per Cent of Farmers Making Labor Incomes of over $1000
$5000 or less	7
$5001–$7500	11
$7501–$10,000	16
$10,001–$15,000	33
$15,001–$20,000	46
$20,001–$30,000	51
Over $30,000	50

TABLE 4. RELATIVE OPPORTUNITIES WITH A GIVEN CAPITAL, AS OWNER, PART OWNER, AND TENANT, NORTHERN LIVINGSTON COUNTY, NEW YORK

Capital of Operator	Owners Operating their Own Land only		Owners Renting Additional Land		Tenants	
	Number of farms	Average labor income	Number of farms	Average labor income	Number of farms	Average labor income
$1000 or less	0		0		20	$368
$1001–$2000	3	$38	0		65	481
$2001–$3000	10	81	8	$145	54	610
$3001–$4000	16	195	9	462	27	626
$4001–$5000	23	347	7	570	16	869
$5001–$7500	46	355	14	485		
$7501–$10,000	62	400	19	583		
$10,001–$15,000	75	694	19	705	More than $5000 — 22	1282
$15,001–$20,000	28	935	3	1018		
Over $20,000	29	1412	3	2269		

The farmers with a given capital who have borrowed money so as to enlarge their business are, on the average, doing better than those who are not in debt. The results for one capital group in Jefferson County are given in Table 5. The farmers who were

able to have larger farms because they borrowed money were making much better labor incomes than were those who farmed only as much land as they could pay for.

TABLE 5. EFFECT ON PROFITS OF ENLARGING THE FARM WITH BORROWED CAPITAL. FARMS WITH AN OWNED CAPITAL OF $5000 TO $10,000, JEFFERSON COUNTY, NEW YORK

	Farms Mortgaged	Farms not Mortgaged
Number of farms	82	64
Average capital owned	$7074	$6952
Average capital borrowed	0	$2281
Average size of farms (acres)	113	141
Average labor income	$414	$665

The same point is shown for each county in each capital group up to $15,000. With a given owned capital of less than $5000, those who use their money to farm as tenants are making the most. The next most profitable way to use this amount of money is to buy a farm larger than the money will pay for, leave the balance on mortgage, and then rent additional land. The least profitable way of using this sum of money is to buy and equip a farm so small that one is not in debt, and then not rent any land.

Those persons who owned over $15,000 worth of property and who were not in debt made a little more than those who went in debt for additional property. This amount of capital gave them farms of 237 acres in Jefferson County and of 230 acres in Livingston County. This agrees with the discussion on size of farm in the following pages, where it is shown that if one has a small farm, additional acreage is of very great importance, but that after 200 acres is passed more land may be desirable but is not so necessary.

One important point not shown in Table 4 is the profit due to rise in land values. If land is likely to rise in price, it may pay a tenant to invest his money in land even though his labor income is much lower than it might be as a tenant. Rising land values are not included in labor income. Ways of farming with small capital are discussed in Bulletin 295 of this station.

Similar results for three other states are given in Bulletin 41 of the United States Department of Agriculture, pp. 19–22. In these states — Iowa, Illinois, and Indiana — more capital is required because the land is higher in price, but the same principles are shown to hold.

Relation of size of farm to profits. Tables 6 and 7 and diagrams on pages 585 and 586 show the relation of size of farm to profits.

TABLE 6. RELATION OF SIZE OF FARM TO LABOR INCOME. 1988 FARMS, TOMPKINS, LIVINGSTON, AND JEFFERSON COUNTIES, NEW YORK

Acres	Number of Farms	Average Number of Acres per Farm	Average Labor Income
30 or less	74	22	$121
31–50	141	44	252
51–100	616	79	402
101–150	572	126	568
151–200	304	177	776
Over 200	281	281	995

TABLE 7. VARIATIONS IN LABOR INCOMES WITH DIFFERENT SIZES OF FARMS. 1988 FARMS, TOMPKINS, LIVINGSTON, AND JEFFERSON COUNTIES, NEW YORK

Acres	Per Cent of Farms of Each Size Making Labor Incomes as Designated					
	Less than $1	$1 to $500	$501 to $1000	$1001 to $1500	$1501 to $2500	Over $2500
30 or less	27	70	3	0	0	0
31–50	18	62	17	3	0	0
51–100	11	55	28	5	1	0
101–150	13	38	30	13	5	1
151–200	9	31	27	22	9	2
Over 200	12	20	24	20	18	6

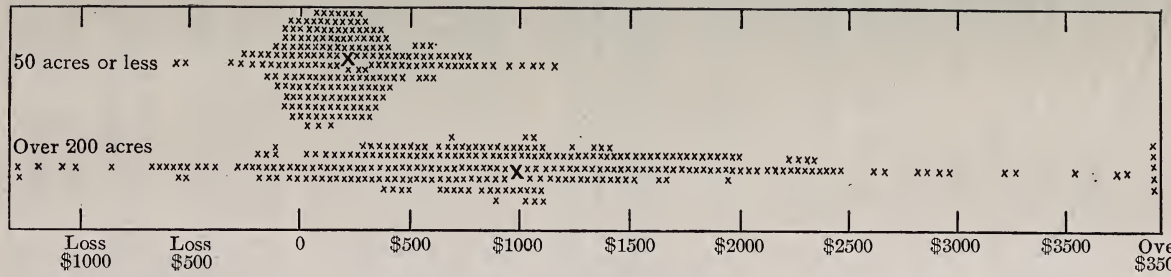
These tables include all the farms in Tompkins, Livingston, and Jefferson counties for which records were obtained, except twenty-six

highly specialized truck farms, one farm of a poultry fancier, one certified-milk farm, and two farms devoted wholly to grazing. A number of farms were also omitted because the owner derived a very large part of his income from buying and selling live-stock, keeping boarders, or some other outside labor. Farms that sold a large amount of lumber were also omitted because this is not an annual crop. Some farms were omitted because they were on the edge of towns where the land values were excessive. Such farms are more in the real-estate business than in farming. The truck farms will be considered later.

Most of the farms here included are rather general farms. On the majority of these, dairy cows are the chief live-stock interest, but many of them kept only a few cows. Some kept sheep. All kept some hens, and a few kept several hundred. The crop sales are varied. The most common crops sold were hay, potatoes, apples, cabbage, beans, wheat. Many other crops were sold from some farms. Nearly all the farms raise hay and oats to feed. Some raised corn for grain. Those that kept many cows usually had silos. The types of farming are representative of perhaps 90 per cent of the New York farms. Some of the farmers sold truck, but highly specialized truck farms are not included, nor are farms that derived much income from greenhouses included. When comparing farms on the acre basis, it would, of course, be misleading to include truck farms and greenhouses with general farms and dairy farms.

The average farmer with 30 acres or less of land made $121 for his year's wages. The average farmer with over 200 acres made over eight times as much. Of the 74 who farmed 30 acres or less, only two made over $500. One of these made a labor income of $534. He sold considerable truck, and probably should not have been included with general farms. The other made a labor income of $511. He hired out as a farm hand for nine months, and raised potatoes, eggs, and some milk to sell.

Of the farms of 50 acres or less, only 4 made labor incomes as high as $1000. One had a 40-acre farm, combined bees with general farming, and made most of his money on honey. His labor income was $1001. Another had a 40-acre general farm



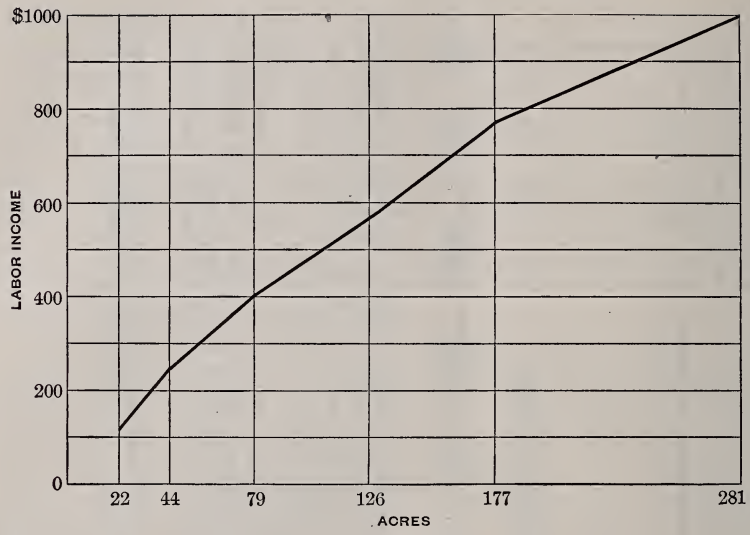
Labor incomes on 215 individual farms of 50 acres or less and on 281 farms of over 200 acres. The large X indicates the average for each group as given in Table 6. Each small cross indicates one farm, and its position indicates the labor income.

The chances for profit or loss on the small farms are very closely limited, as is shown by the close grouping in the figure. Nearly all the farms of less than 50 acres made labor incomes from a loss of $200 to a gain of $400. It is very difficult to make a large profit, and there is very little danger of a large loss on a small place.

The farms of over 200 acres bring opportunities for both success and failure. The great majority of the farmers on these farms make more than the average on the small farms. But a few lost much more than it is possible to lose on a small place. Eight farmers made $3500 to $7250. There is not room on the diagram to show these in their proper places.

Of the large farms, 53 made lower labor incomes than the average small farm, but 101 did better than the best small farm. Only 4 of the small farms did as well as the average large farm.

The extremes only are given on the diagram. The farms of 51 to 100 acres are grouped rather closely, much like those of 50 acres or less. The farms of 100 to 200 acres show a gradual spreading out and a constantly increasing number of those making good profits as the opportunities increase.



Relation of size of farm to labor income on 1988 farms. With a small area additional acres increase the labor income very rapidly, but with over 177 acres additional land is not so important. Another 100 acres added to a farm of 79 acres increases the labor income by nearly $400, but a second 100 acres further increases it by only a little over $200

that he ran in addition to hauling milk every day in the year. His labor income was $1042. Most of his money came from hauling milk. Another made a labor income of $1051 from a 40-acre farm by retailing milk. The fourth made $1159 from a 50-acre general farm. He had a good crop of cabbage, which sold for $22 per ton. It will be seen that each of these had unusual conditions.

Of the farms of less than 30 acres, only 2 made over $500, but 68 per cent of the farms of over 200 acres made more than this amount and 24 per cent made over $1000. The average for the farms of over 200 acres was $995.

The results given in Table 6 are shown in the diagram above. This shows how rapidly the labor income increases with the size of farm. The shape of the curve also shows that additional area is of great importance up to 177 acres, but that after this it is of less importance. Adding 100 acres to a 177-acre farm

increases the labor income about half as much as it does when added to a 79-acre farm.

These results are in no way local in their application. Similar studies in New Hampshire have shown the same results. A study of 277 farms in Iowa, Illinois, and Indiana showed the same relationship between size of farm and profits. The farmers with less than 160 acres of land made very poor labor incomes.[1]

Tenants on the larger farms are also making very much more than those on the smaller farms. The percentage received by the landlord is about the same with different sizes of farms (Bulletin 295 of this station, p. 417). The reason is that the tenant furnishes machinery, horses, and labor, and these are the chief items on which a saving is made by having a large farm.

Relation of size of farm to efficiency in the use of labor. In every county studied, the small farms accomplish much less per man than do the fair-sized farms. Table 8 gives results for Jefferson County. The average number of men per farm as given in the table includes all human labor. Work of women and children is expressed in terms of the number of men that would have been required to do the same work. On the smallest farms very little work was done by any one except the operator. On the farms of over 200 acres, the hired labor and labor by members of the family amounted to the time of one and one-third men, or, counting the time of the farmer, these farms had the equivalent of 2.35 men.

In making comparisons of farms, it is necessary to have some basis for comparing the different kinds of animals. One horse, cow, or bull is called an animal unit. Two head of young stock are counted as one animal unit. Seven sheep, 14 lambs, 5 hogs, 10 pigs, 100 chickens, are each counted as an animal unit.[2]

The farms of less than 30 acres had an average of 3.5 animal units per farm besides work horses. Those of over 200 acres had an average of 34.2 animal units besides work horses.

The producing enterprises on the farm are the acres of crops grown and the animals other than horses. The horses do not

[1] U.S. Dept. Agr., Bureau of Plant Industry, Circular 75, pp. 11–16; U.S. Dept. Agr., Bulletin 41, pp. 24–29.

[2] Cornell University Agr. Exp. Station, Bulletin 295, p. 473.

often contribute to the income. Even if colts are raised, they usually decrease the cost of horse labor rather than actually add to the income.

The acres of crops grown, the yields of these crops, the number of producing animals and the production of these animals are a measure of the amount that is being accomplished on a farm. The crop yields and the production of animals are no better on the small farms than on the large farms, hence the acres of crops and animals kept are a fairly accurate measure of the amount accomplished. The acres of crops raised per man varied from 13 on the small farms to 57 on the largest farms. The number of animal units per man varied from 3 on the small farms to 15 on the largest farms (Table 8).

TABLE 8. RELATION OF SIZE OF FARM TO EFFICIENCY IN THE USE OF LABOR. 670 FARMS, JEFFERSON COUNTY, NEW YORK

Acres	Average Man Equivalent	Average Acres of Crops	Average Number of Animal Units except Work Horses	Acres of Crops per Man	Animal Units except Horses per Man
30 or less	1.04	14	3.5	13	3
31–50	1.18	25	7.9	21	7
51–100	1.34	40	13.2	30	10
101–150	1.61	66	19.4	41	12
151–200	1.98	89	25.1	45	13
Over 200	2.35	134	34.2	57	15

Relation of size of farm to work done. From cost accounts and other records, we know approximately how much time it takes to do each kind of farm work under normal conditions. The raising of an oat crop ordinarily takes 15 to 25 hours of man labor and 20 to 40 hours of horse labor per acre. With anything like efficient methods of work, 20 hours of man labor and 30 hours of horse labor per acre is sufficient. Many New York farmers do better than this. We may therefore say that an oat crop represents 2 days of man work and 3 days of horse work.

As in doing any kind of work, some persons do it in less and some in more time. If much more time than this is spent, the work is not efficiently done. This may be because the fields are too small, because of poor machinery, because the land is unusually hard to work, or for other reasons. It matters not why time is lost. If it is lost, the farm is not efficient.

Similarly the average farmer spends about 150 hours of work per year on a cow. If the barn or pasture is unhandy, or if he has only a half-dozen cows, more time may be required. Some farmers who get good returns spend less time. To care for a cow for a year may be counted as about 15 days' work.

In order to compare farms, all the productive enterprises are similarly expressed in work units. The income of the farm is dependent on the crops raised, the cows and other productive animals kept, the outside work done for pay. Much other work may be done, such as repairing machinery and buildings, taking care of work horses, mowing the lawn, etc., but it is the productive work that limits the income. The units of productive work of all kinds were calculated for each farm in Jefferson County. The units used for the more common enterprises were as follows:

	Man Work Units	Horse Work Units
Timothy, alfalfa, clover, per acre per cutting	1	1
Oats, wheat, barley, rye, buckwheat, per acre	2	3
Corn, husked from shock, per acre	6	6
Corn for silo, per acre	6	7
Field beans, per acre	5	5
Potatoes, per acre	12	10
Cabbage, per acre	13	12
Apples, per acre	15	5
Dairy cow	15	2
10 cattle or colts running loose	20	1
10 brood sows, and raising pigs to weaning	30	5
50 hogs, not brood sows	25	5
100 ewes	50	3
100 hens	15	2
Raising 200 chickens	15	2

TABLE 9. RELATION OF SIZE OF FARM TO EFFICIENCY IN THE USE OF MEN AND HORSES. 670 FARMS, JEFFERSON COUNTY, NEW YORK

Acres	Units of Productive Work per Man	Units of Productive Work per Horse
30 or less	102	35
31–50	154	41
51–100	205	57
101–150	245	62
151–200	253	65
Over 200	294	76

The average amount of productive work per man varied from 102 work units on the small farms to 294 on the largest farms. Each man on the largest farms is accomplishing nearly three times as much work as the men on the small farms. It must be remembered also that the crop yields and the returns per cow are as good on the larger farms. Each horse on the large farms is accomplishing twice as much as each horse on the small farms. The farms of less than 100 acres are very wasteful of both man and horse labor.

TABLE 10. RELATION OF SIZE OF FARM TO EFFICIENCY IN THE USE OF HORSES. 1248 FARMS, JEFFERSON AND LIVINGSTON COUNTIES, NEW YORK

Acres	Number of Farms	Acres of Crops	Number of Horses	Acres of Crops per Horse
30 or less	42	14.2	1.5	9.5
31–50	64	28.4	2.3	12.3
51–100	315	46.8	3.1	15.1
101–150	364	73.5	4.2	17.5
151–200	226	98.7	5.0	19.7
Over 200	237	152.8	7.2	21.2

Relation of size of farm to efficiency in the use of horses. The discussion given above is the best way of comparing horse labor.

Another comparison is shown in Table 10. On the large farms, twice as many acres of crops are raised per horse as on the small farms. The average cost of keeping a horse on New York farms, as shown by cost accounts, is about $150 a year. This includes feed, labor, depreciation, and all other costs. From this the importance of the efficient use of horses is apparent.

Relation of size of farm to efficiency in the use of machinery. The small farms are very inadequately equipped with machinery, as is shown in Table 11. Even the farms of over 200 acres have an investment in machinery of only $833. This represents machinery of all ages. Probably the cost when new would be over twice as much, but even this sum will not provide all the well-established machines, such as a grain-binder, manure-spreader, and hay-loader for each farm. But, while the small farms are not well equipped, their cost of machinery per acre of crops is almost double that on the larger farms.

TABLE 11. RELATION OF SIZE OF FARM TO EFFICIENCY IN THE USE OF MACHINERY. 1248 FARMS, LIVINGSTON AND JEFFERSON COUNTIES, NEW YORK

Acres	Acres of Crops	Value of Machinery	Value of Machinery per Acre of Crops
30 or less	14.2	$141	$9.93
31–50	28.4	207	7.29
51–100	46.8	426	9.10
101–150	73.5	497	6.76
151–200	98.7	613	6.21
Over 200	152.8	833	5.45

Relation of size of farm to efficiency in the use of capital. The small farm has relatively much more of its capital invested in unproductive ways than does the large farm. No matter how small the farm may be, the owner desires a respectable house. Table 12 shows that the smallest farms have 43 per cent of their capital in houses; the largest farms have somewhat better houses, but have only 9 per cent of their capital thus invested.

TABLE 12. AREA RELATED TO INVESTMENT IN BUILDINGS. 578 FARMS, LIVINGSTON COUNTY, NEW YORK

Acres	Value of Houses	Per Cent of Total Capital in Houses	Value of Other Buildings	Per Cent of Total Capital in Other Buildings	Value of Other Buildings per Animal Unit
30 or less	$1494	43	$655	19	$164
31–50	1000	23	681	15	95
51–100	1236	18	1091	16	87
101–150	1477	14	1408	13	74
151–200	1810	13	1900	13	73
Over 200	2113	9	2552	11	50

The barns on the small farms also take a much larger proportion of the capital. The smallest farms have 19 per cent of their capital thus invested, the largest farms have only 11 per cent thus tied up. An equally good barn for ten head of stock costs much more than half as much as a barn for twenty head of stock. The smallest farms have an investment in barns of $164 per animal unit.[1] The largest farms have only $50 per animal unit. Yet observations lead to the conclusion that the stock on the larger places is better housed. If interest, repairs, depreciation, and insurance on a building amount to 10 per cent of the value, then the housing cost per animal unit will vary from $16 per year on the smallest farms to $5 per year on the largest.

Similar results for the United States are shown in Table 13. These indicate, as for other points in this work, that the results are of general rather than local application. The farms of less than 20 acres have 36 per cent of their capital invested in buildings and machinery. Those of 100 to 174 acres have only 17 per cent of the money thus invested, yet they have much better buildings and more machinery. Money thus employed not only is unproductive, but is a source of constant cost for repairs. If a farmer had all his money invested in buildings and machinery, his income would, of course, be zero. In fact, he would not be a farmer at all.

[1] For definition of "animal unit," see page 587.

TABLE 13. AREA RELATED TO INVESTMENT IN BUILDINGS AND MACHINERY, FOR UNITED STATES, 1909, FROM THE CENSUS REPORT

Acres	Value of Buildings per Farm	Per Cent of Capital in Buildings	Value of Machinery	Per Cent of Capital in Machinery
Under 20	$605	34	$56	2.5
20–49	474	21	76	2.8
50–99	848	19	156	3.1
100–174	1182	14	241	2.7
175–499	1734	10	390	2.4
500–999	2174	8	639	2.4
1000 or over	3330	5	1196	1.0

Relation of size of farm to crop yields. The larger farms produce crops as good as, or better than, those produced on the small farms, as is shown in Table 14. Since the small farms keep more horses and men, the amount of product that they have left over is

TABLE 14. SIZE OF FARM RELATED TO CROP YIELDS, LIVINGSTON COUNTY, NEW YORK

Acres	Average Size (Acres)	Acres per Animal Unit	Yield per Acre of				
			Wheat (bushels)	Oats (bushels)	Hay (tons)	Potatoes (bushels)	Beans (bushels)
30 or less	20	5.0	18	39	1.21	92	18
31–50	44	6.3	19	40	1.58	98	18
51–100	79	6.1	19	41	1.49	116	18
101–150	125	6.6	19	42	1.53	108	16
151–200	173	5.8	19	47	1.39	111	17
Over 200	300	5.9	19	43	1.45	116	15

less per acre than the amount left for city consumption from the larger farms. In addition, there is a waste of human labor and resources in making machinery and buildings that are not given full use on the small places. From every standpoint, the farms that are large enough to keep machinery and horses busy and provide full work for a farmer and his sons are most desirable.

The relation of the number of acres of crops to the yield of crops is shown also in Table 15. The farms with less than 20

TABLE 15. RELATION OF ACRES OF CROPS TO LABOR INCOME. 578 FARMS, LIVINGSTON COUNTY, NEW YORK

Acres of Crops	Average Acres of Crops	Number of Farms	Labor Income	Crop Yields Compared with the Average of the Region (Per cent)
20 or less	14	18	$24	75
21–40	31	55	257	102
41–60	51	95	400	103
61–80	69	115	481	102
81–100	90	95	642	101
101–140	118	112	937	103
Over 140	193	88	1261	100

acres of crops have poor crops, probably because they cannot afford the necessary machinery. Aside from this there seems to be no relationship between the acres of crops grown and the yields per acre.

Results in other states. Bulletin 41 of the United States Department of Agriculture, pp. 24–29, shows that the same principles governing the size of farm apply in Iowa, Illinois, and Indiana. Few farms of less than 160 acres were giving good labor incomes. The labor cost per acre of crops was high on small farms. The acres of crops raised per horse was low and the cost of machinery was very high on the small farms. The crop yields were as good on the large farms as on the small ones.

Relation of area in crops to profits. Probably a more accurate way of measuring the size of farms is to compare the area in harvested crops. This is in addition to pasture, woods, and other land not cropped. Results of such a comparison are shown in Table 15. The results for the other counties agree with those here published.

Most of the economies in production are dependent on the area of crops grown. Five horses can raise 100 to 125 acres of

general farm crops when the crops consist of a good combination of grain and hay combined with potatoes, apples, or cabbage. If the crops are of the above kinds, there should be at least 20 acres per horse, but if they are largely hay and grain, there should be at least 30 acres per horse. In the Eastern states, the cost of horse labor per acre is more than the interest on the land. While five horses can raise 125 acres of crops, it is difficult to raise 50 acres of crops with two horses. Farm machinery is built on the two-, three-, and four-horse basis. Evidently, if one has less than 80 acres of crops, he must go without good machinery or must keep too many horses. There is no solution of the problem for him. Machinery, horses, and labor cannot be used to the best advantage with less than 100 to 125 acres of crops, 150 to 200 acres is still better.

Truck farms. The preceding discussions should not be confused with truck farms. In Livingston County, records were obtained for 17 truck farms on muck soil. The chief crops on this soil were lettuce, celery, spinach, and onions. This type of farming is highly speculative. Crops are by no means sure, and prices are extremely variable. One of these farmers made a labor income of $2931 from 8 acres. This is the highest labor income thus found for so small a farm. Another of these muck farms lacked $1934 of having any labor income.

In Jefferson County, records were obtained for 10 truck farms. Most of these used lowland soils that were not true muck. Seven had 20 to 50 acres. Their average labor income was $662. Three had over 50 acres and made an average labor income of $789.

Unusual conditions may affect results. Exceptional prices or exceptional land values may decidedly affect results. The results for a 15-acre dairy farm that was formerly operated by Mr. Dietrich[1] have been widely quoted and have been the cause of much misunderstanding. The farm was fairly profitable. Apparently a labor income of about $1000 was made. The farms studied in New York of over 200 acres probably had an average capital of no more than this man had invested, but 44 per cent of them made labor incomes of over $1000.

[1] U. S. Dept. Agr., Farmers' Bulletin 242.

Mr. Dietrich sold milk to a state institution at $6\frac{1}{4}$ cents a quart wholesale, the year round. At ordinary wholesale prices he would have lost money. He did very well for his conditions, but his conditions were entirely unusual. Land was worth city prices, so that he could not afford much of it. Milk was at an exceptional price.

In cities there are successful dairies with less than an acre of land. They buy their cows and buy all the feed and bedding. But such dairymen get more for their milk because of their location. It would be impossible for them to produce milk at a profit if it were sold at wholesale farm prices. Such special cases do not in any way affect the general principles as to the importance of size of farm.

Profits on very large farms. At the same time that small farms in the general-farming states are being combined, the very large farms have been decreasing in number. All the discussions given above apply to "family farms" on which the farmer and his family do most of the work. On the farms of over 200 acres in Livingston County, there was an average of less than two hired men per farm. In Jefferson County, the farms of over 200 acres had an average of one hired man per farm. In each county the farms of less than 150 acres furnished work for less than one person besides the farmer.

There are many reasons why very large farms are at a disadvantage. Even with the buildings in the center of the farm, it is not often profitable to run more than 600 acres from one center, because of the loss of time in going to and from the fields. The great variety of work that must be done makes it difficult to handle men in gangs and use them like machines. The large area over which operations must be conducted makes it impossible to use factory methods. The frequent changes of work on a moment's notice, because of weather or other conditions, makes it difficult to prevent loss of time in shifting from one job to another. The prices of farm products are based on production by the farm family with a little hired help. This sort of labor is interested and accomplishes much more than can be done by a large farm where the men have no direct interest. It is very difficult for the "bonanza" farm to compete with these conditions.

Ways of increasing the size of business. Some persons have drawn the erroneous conclusion that a man with a small capital cannot be a farmer because a large farm is necessary. This is far from the case. One with no money can be a hired man. One who has $1000 to $2000, who knows how to farm, and who is efficient and honest can rent a good farm. There are many ways of getting control of a good-sized farm without owning it all. Only 36 per cent of the farmers in the United States own all the land that they operate and are free from debt.

Some farmers who have small farms and who are not in debt would do well to borrow money and buy more land. Many farmers have taken this means of increasing the size of their business.

There are over half a million farmers in the United States who own part of the land that they farm and rent additional land. This is usually farmed with little more men, horses, or machinery than would have been required to farm the land owned. Very frequently this is the best solution of the problem for one who already owns a farm. In every county and in every state where such studies have been made, the farmers who rent additional land make more than those who farm only as much as they own.[1]

Another way of increasing the size of the business is to use the land for a more intensive type of farming, as poultry-raising or truck growing. The soil, climate, transportation, and other factors have such a controlling influence on type of farming that one should give the matter careful study before attempting a type of farming that is not already followed in the region. Farmers have tried almost everything. The present types of farming are the ones that have stood the test. They are usually not far wrong.

On many farms, the acres of crops can be increased by changing brush land to pasture and farming the pasture land. Other farms have land that can be reclaimed by drainage. There are other cases in which land is already being used too intensively.

[1] Cornell University Agr. Exp. Station, Bulletin 295, p. 426. U.S. Dept. Agr., Bulletin 41, p. 14.

There is no use in planting crops if the yield is so poor or the labor so great as to make a profit impossible.

Many farmers on small places hire out for various kinds of work and thereby increase their incomes.

In many instances, it is better to remain a tenant on a large farm rather than buy a place that is too small for efficient farming. This problem is a hard one to answer, because of the uncertainty as to the rise in land values. If prices are likely to rise much in the region, it will pay to change from tenant to owner sooner than would otherwise be desirable.

For general farming, one should ordinarily hesitate to work a farm unless he can raise 80 acres of crops on it or can rent additional land.

Conclusions as to the best size of farm. Many farmers get their start on smaller places and by economy are able to save money, but for general farming or dairy farming there are great advantages in having at least 150 acres of land. On the average farm studied, this would include about 80 acres of crops. An area that provides for 100 to 200 acres of crops is very much better.

There are many farm operations that require two men. On a one-man farm, the horses are kept out of the field whenever the farmer does chores, hand work, or goes to town. On a two-man farm, one man may be using all the horses while the other man does other work. If there are four or five horses on the place, the man who is working the teams may be driving three or four horses, and at the same time the other man may make a trip to town with one horse. All the horses are then kept at work. A farm with five horses has a great advantage in being able to adjust the size of team to machinery and work. It allows a five-horse team; a four-horse team or two two-horse teams, with a single horse for other work; or allows a three- and a two-horse team. By these means, the labor of men and machinery is economized and work can be more promptly done. The chores are frequently done by the man not working the team, again keeping the horses in the field. It is almost impossible to keep the horses busy on a one-man farm.

If a farmer has only two horses, he cannot take advantage of the great economy that comes from driving three- and four-horse teams. Even if he could borrow the horses and machinery, he could not use them to the best advantage in his small fields. The farms of over 150 acres are the smallest ones in the counties studied that employ the equivalent of two men and five horses.

If the farmer has sons, he needs enough land to provide profitable work for them else they will have to leave the farm. In Bulletin 341 of this station, the effect of the size of farm on boys leaving the farm is shown.

To make a moderate success on a small farm is much more difficult than to make a good success on a fair-sized farm. When the necessary equipment and horses for an 80-acre farm will be almost sufficient for 160 acres, and when a family can do all the work on the larger farm, it will be seen at once that the larger farm will double the income without much more expense. It therefore becomes a task for a genius on the 80-acre farm to compete with a very ordinary mortal on the larger area.

It takes much less intelligence to make a profit out of a mowing machine that cuts 50 acres a year than it does out of one that cuts 10 acres. It takes less ability to make a profit out of four horses that raise 100 acres of crops than it does to make a profit out of half as many horses that farm only 40 acres. It takes much less intelligence to direct a hired man so as to make a profit from employing him if he drives three or four horses, than it does if he drives two horses.

The above discussion applies to general farming and dairy farming, but, whatever the type of farming, the farm should be large enough to allow for the use of the well-established labor-saving practices, and large enough to provide a variety of products that make a full year's work. For truck growing, 80 acres may be as large as 300 acres in general farming. An acre partly covered with greenhouses may be an equally large business.

There is much discussion of this subject by persons who have had no farm experience or whose farm experience was gained before manure-spreaders, potato-diggers, and hay-loaders were invented. These persons usually advise little farms rather than

150- to 200-acre farms. The advice is also constantly given that farmers turn to truck growing. The supply of truck crops is easily overdone. It is usually unwise to grow truck crops unless both the soil and the markets are particularly adapted to such crops. The vast majority of our farmers must continue to produce wheat, milk, hay, oats, potatoes, and the general farm crops. Such advice is usually given under the impression that small farms and truck crops will reduce the cost of living in cities. Under American conditions, the fair-sized farms produce farm products at least cost, so that the little farm is not desirable from any standpoint. Farmers are quick to respond whenever any type of farming promises greater profits. They change to truck growing wherever conditions warrant the change.

A farm of 1 to 20 acres makes an excellent home if one has some other source of income, but a general farm of this area is a very poor business. A farm is a place to work. The man who buys a farm buys a permanent job. If the farm is not large enough to provide a fair amount of productive work, it must of necessity be a very poor business.

RELATION OF CROP YIELDS TO PROFITS

Relation of crop yields to labor income. In order to determine the influence that yield per acre of crops has on profits, the yields on each farm were expressed on a percentage basis with 100 per cent representing the average yield of the region. The footnote to the table on page 601 gives the method of making the calculations. On some farms the larger yields are due to better soil, on others they are due to better methods of farming.

An average crop in Livingston County is better than the state average because the soils of the northern part of Livingston County are much better than the average. The yields were about 15 per cent above the averages given for the state by the census report.

The average yields in Livingston County for the year studied were hay, 1.42 tons; wheat, 18.5 bushels; oats, 41.1 bushels; beans, 15.9 bushels; corn, 39.6 bushels; potatoes, 106 bushels; cabbage, 6.18 tons.

The effect of crop yields per acre on labor income is shown in Table 16 and by the chart on page 603. There is almost as striking a correlation between yield and profit as between size of farm and profit. Of course some persons who have large farms make large labor incomes in spite of poor crop yields, but this does not in any way disprove the importance of good yields. On the average, the farmers whose crop yields dropped more than 15 per cent below the yields secured by the neighbors did not make hired man's wages.

Of 118 farms with crop yields 15 per cent or more below the average, only 7 made labor incomes of over $1000, but of 135 farms with crop yields over 15 per cent above the average, 55 made labor incomes over $1000.

Of course, there are instances of success with low crop yields when other factors are favorable. One man who had 166 acres of land and whose crop yields were only 62 per cent of the average made a labor income of $1652, but his receipts per cow were over twice the average and he received a high price for apples. Four men with large farms made over $3000 with crop yields 8 to 14 per cent below the average. They did well in spite of rather low yields. Others with farms of the same size and better crops did better.

TABLE 16. RELATION OF CROP YIELDS TO LABOR INCOME. 574 FARMS, LIVINGSTON COUNTY, NEW YORK[1]

Yields compared with Average of Region (Per cent)	Average Yield compared with Average of Region (Per cent)	Number of Farms	Labor Income
75 or less	67	58	$165
76–85	81	60	219
86–95	90	102	663
96–105	101	116	570
106–115	110	103	878
116–125	120	66	951
Over 125	138	69	1090

[1] If a farmer gets a small yield of hay and a large yield of oats, it is difficult to say whether his crops are good or poor. In order to make a comparison, all yields

The chart on page 603 shows the labor incomes made by farmers whose crop yields were 15 per cent or more below the average and by those whose crop yields were 15 per cent or more above the average. Each cross represents one farmer and its position indicates his labor income.

The relative positions of the two entire groups show the importance of crop yields. In each group there are great variations due to size of farms, receipts per cow, and many other factors. There is only a little correlation between crop yields and receipts per cow or size of farm (p. 503), so that these influences scatter the farms in each group but do not affect the position of the group as a whole. The scattering within the group misleads many persons who are used to drawing conclusions from individual cases. There are plenty of individuals who are doing better with poor crops than some one else is doing with good crops. Such cases are because of some other difference that is great enough to more than offset the result that comes from the crop yields.

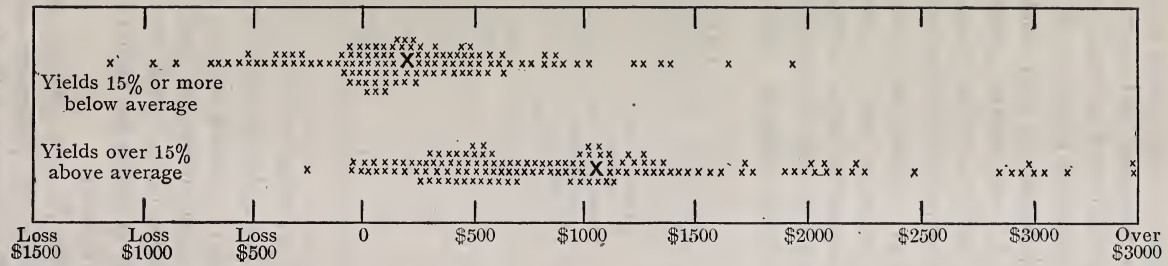
Good crops are one of the primary factors affecting profits, but phenomenal crops are not necessary. Few farmers raise crops more than a third better than the average. Good crops

must be charged to a percentage basis. The method of figuring the percentage yield is illustrated as follows: Suppose that a farmer has 20 acres of wheat yielding 15 bushels, 30 acres of oats yielding 40 bushels, and 50 acres of hay yielding 1.7 tons. Each of these yields is compared with the average of the region as given on page 626. The wheat yield is 81 per cent of the average. The oat yield is 97 per cent. We then have

Acres	Per Cent	Percentage times Acres
20	81	1,620
35	97	3,395
50	120	6,000
105		11,015

Dividing 11,015 by 105, we find that this farmer's yields are 105 per cent. This we call the crop index.

When the total crop is given, a short way of figuring crop index is to divide the total yield of each crop by the average for that crop, add the results, and divide by the number of acres. It will be seen that this is the same as the above method except for the order in which the operations are done.



Relation of crop yields to labor income on 118 farms with crop yields 15 per cent or more below the average and on 135 farms with crops over 15 per cent above the average. The large X indicates the average. The relative position of the two groups of farms shows the importance of good crops. The scattering within the group is due to other factors. In either group there are examples of good and of poor results, but it is the position of the groups and not the results in any instance that indicates the importance of crop yields.

Comparison with the chart on page 585 indicates that poor crops, while on the average just as serious as too small a farm, do not so closely limit the profits. The small farm has very little opportunity for a good profit and very little danger of large loss. With poor crops one may have very large losses if the business is large enough, and may also have a good profit if other factors are favorable, but, of course, not so large profits as a similar farm with better crops.

pay, but it is not necessary to raise "two spears of grass where one grew before." Those who raise one and a fifth are doing very well. In fact, it is not probable that it would often pay to raise twice as much as the neighbors raise *on the same soil.* Farmers keep a fairly close adjustment of crop yields to prices, but, being conservative, they do not always change quite as promptly as conditions would justify them in doing. They are not so foolish as to be 100 per cent out of adjustment to conditions, as is assumed when they are advised to double their crop yields. Of course, individual instances can be cited in which such a change has paid, but instances prove nothing.

In Jefferson County, there was not quite so striking a relationship between crop yields and labor incomes. The reason for

TABLE 17. RELATION OF CROP YIELDS TO LABOR INCOME. 670 FARMS, JEFFERSON COUNTY, NEW YORK

Yields compared with Average of Region (Per cent)	Average Yield compared with Average of Region (Per cent)	Number of Farms	Labor Income
75 or less	65	94	$306
76–85	81	85	526
86–95	91	95	618
96–105	101	103	650
106–115	111	87	662
116–125	120	67	693
Over 125	143	139	755

this is that the region depends on crops to a less extent. Probably the difference is also in part due to the kind of crops. Much more of the area is in hay. A small yield of hay may be harvested so cheaply that it may pay when an equally poor yield of a crop that required more labor would result in a loss. But, even in Jefferson County, the crop yields are next in importance to area, receipts per cow, and diversity.

Relation of crop yields to other factors. As has already been shown (p. 593), the crop yields are practically the same on large and on small farms. The farmers with the best crops

spend a little more for fertilizer, but even those who got the best crops spent an average of only 60 cents per acre of crops in Livingston County and 26 cents in Jefferson County. The farmers with the best crop yields kept somewhat more live-stock than did those with the poorer yields. The farms that gave the best crop yields had an animal unit for each 3.4 acres of crops in Livingston County, and one for each 2.2 acres of crops in Jefferson County. The percentage of receipts from cash crops was about the same in each group. The better crops enable the farmers to keep more live-stock and yet sell as large a proportion of cash crops as are sold on the farms with poorer yields. In Livingston County the receipts per cow had no relationship to the crop yields. In Jefferson County the returns per cow were a little better on the farms that got the best crops. The amount of work accomplished per man or horse is just the same on the farms getting good crops as on those getting poor crops. The good crops do not come from working fewer acres per man or horse.

Comparative influence of crop yields and size of farm on profits. Crop yields are a very important factor affecting profits, but their importance has often been over-emphasized. Yields are only one of the limiting factors. Unfortunately the almost universal method of emphasizing the importance of yields is to disparage the importance of number of acres. The size of business is fully as important as yields. It is not necessary to deny the importance of either one in order to prove the importance of the other. One of the oft-quoted axioms that is about as misleading as most axioms is that the farmer should "farm fewer acres and do it better." We have already seen that the larger farms raise crops as good as the small ones. There is no necessity for reducing the size of farm below the area that is adapted to modern machinery in order to raise better crops. The advice to farm better is good, but it is a mistake to assume that this calls for fewer acres.

Table 18 shows in a most striking way the combined influence of size of farm and crop yields. With any given size of farm, the labor incomes increase very rapidly as crop yields increase.

If the crops are very poor (more than 15 per cent below the average), there is usually little profit with any size of farm. If crop yields drop so low that they are raised at a loss, more acres would not help matters. But with average crops, the profits increase rapidly with size of farm.

The farms of 50 acres or less did not do very well even if they did have good crops. The farms of 51 to 100 acres with the best crops made more than the farms of 101 to 150 with average crops, but not nearly so much as the farms of over 200 acres with average crops.

Farms of 101 to 150 acres with the best crops made more than did farms of 151 to 200 acres with average crops, but not much more than half as much as did farms of 151 to 200 acres that also had the best crops.

A comparison of the chart on page 585 with that on page 603 shows that area sets a more positive limit on profits than do yields. The farms of a given area are grouped more closely about the average than are the farms with given crop yields. This should be expected. With a given area, one soon reaches the limit of crop production. He cannot get yields of five to ten times the average. But with given crop yields, there are some farms over five to ten times as large as others.

TABLE 18. RELATION OF SIZE OF FARM AND CROP YIELDS TO LABOR INCOME. 574 FARMS, LIVINGSTON COUNTY, NEW YORK

Acres	Crop Yields compared with Average of Region		
	85 per cent or less	86 to 115 per cent	Over 115 per cent
	Labor income	*Labor income*	*Labor income*
50 or less	$29	$321	$355
51–100	185	427	656
101–150	94	592	985
151–200	449	934	1749
Over 200	266	1056	1773

Conclusions on crop yields. Usually the most profitable way for the individual farmer to secure good crops is to get a farm that

has a naturally rich soil. It is usually much cheaper to buy fertility in the soil than to buy poor land and spend years and money in making it productive.

With any given soil, the crops may be increased by saving the farm manure and by spreading it thin enough with a manure-spreader so that the entire farm can be covered frequently, every five years if possible. It is much better to spread five loads per acre every five years than to spread ten loads every ten years.

The use of more fertilizers, lime, tile drains, better methods of tillage, and better crop rotations may also be called for. Which of the various means of securing good crops to use, and just how far to go with one before improving on some other point, is a problem that taxes the best judgment of the most experienced farmer. Certainly it does not pay to go on permanently raising crops that are poorer than the neighbors raise. If the results in the entire neighborhood are too low because of poor soil, it may be best to change the type of farming or to go elsewhere. There is no more reason for working a farm that cannot be made to pay than there is for working the abandoned iron mines in New York that cannot be made to pay.

Apparently a farmer would do well to use some means by which he can obtain yields a little better than his neighbors obtain *on the same soil.* About a fifth better seems to be a good standard to work for. If the neighbors raise one ton of hay, it is probable that it will pay to raise at least 1.2 tons. If they raise 1.5 tons, it is probable that 1.75 tons will pay better. But on the soil that normally raises 1.5 tons, it is probable that 3 tons can be raised at less cost per ton on two acres than on one. In short, it is usually not wise to go too far beyond the natural limitations of the soil. Certainly this is the opinion of the farmers. The highest crop index in Livingston County was 186 per cent. There was no farmer whose crops were twice as good as the average. There were, of course, instances of a single crop being as good as that, but, taking all the crops together, 86 per cent above the average was the highest yield obtained. This farm had a soil that was naturally extra good.

RELATION OF PRODUCTION OF ANIMALS TO PROFITS

Receipts per animal. If a farm keeps many animals, the returns from them are of course just as important as are the crop yields. The products sold from the average cow little more than pay for the feed. But the value of the feed in New York is usually only about 55 to 70 per cent of the total cost of keeping a cow. There can be no profit from keeping an average cow with the present prices that farmers receive for their dairy products. The prices of products ought to be high enough so that an average cow would pay interest and wages to the farmer. But the general question as to price of milk is not a matter that any individual farmer can settle. The purpose of this bulletin is to help individuals with their personal problems. The individual must take the price offered, and, if he is to make a profit, must adjust his business accordingly. There is no surer way of losing money than to feed cows that do not pay their feed bill.

The average receipts per cow from milk and its products were $53 in Tompkins County, $57 in Livingston County, and $59 in Jefferson County. This is in addition to milk used for the few calves raised and in addition to milk used in the home. When all feed is counted and the entire value of milk and stock is counted, the average cow pays her feed bill, but the manure does not begin to pay all other costs. Evidently one must have cows much better than the average in order to make money.

The receipts per cattle unit averaged $52 in Tompkins County, $52 in Livingston, and $57 in Jefferson. This includes returns from all sources for the entire cattle industry. This indicates that the returns from raising and selling cattle do not greatly change the results.

When all animals except horses are included, the results are little changed, the receipts per animal unit except work horses being $52 for Tompkins County, $50 for Livingston, and $61 for Jefferson.

Relation of receipts per cow to profits. Table 19 shows the relation of the receipts per cow to profits on farms in Jefferson County having six or more cows. Not until the receipts per cow reach $75 do the cows aid the farmer in making a profit. Efforts

TABLE 19. RELATION OF RECEIPTS PER COW FROM MILK AND ITS PRODUCTS TO PROFITS ON 585 FARMS WITH SIX OR MORE COWS, JEFFERSON COUNTY, NEW YORK

Receipts per Cow	Average Receipts per Cow	Number of Farms	Labor Income
$30 or less	$22	45	$241
$31–$50	42	178	394
$51–$75	63	221	764
$76–$100	86	111	909
Over $100	119	30	1307

to raise the receipts per cow are worthy of the most serious attention. There were 223 farmers in Jefferson County who sold less than $51 worth of milk and its products per cow. If these farmers cannot find a way to get better returns, it would pay them to sell their cows and either keep some other kind of livestock or else not keep any.[1]

The size of the farms is practically the same in each group of receipts per cow. The rate of work of men and horses is also practically the same. The men who get the best returns per cow are not reducing the number of cows per man. The crop yields are a little better on the farms getting the highest returns per cow. This would help to raise the labor income. The percentage of receipts from crops is lowest on the farms that secured the best returns per cow. As we shall see later, this tends to reduce the profits. This will probably offset the effect of better crops, so that the higher labor incomes are probably the direct result of the returns per cow.

Better cows and better feeding are the two chief differences that result in better returns per cow. Weighing the milk from each cow, cow-testing associations, and methods of feeding are worthy of much more attention in every county studied. Bulletins and advice on these subjects are readily available.

The number of calves raised is not strikingly different in the different groups. Those with the poorest returns are raising a little larger proportion of their calves.

[1] Cornell University Agr. Exp. Station, Bulletin 295, p. 484.

The extent to which the farmers are buying cows is about the same in the first three groups. They replace about 1 cow in 23 by purchase each year. Those who get returns of $76 to $100 per cow are doing more buying and selling. Those who secured returns of over $100 per cow are doing the most buying and selling. Each year they replace one seventh of the herd by purchase and one eighth with heifers raised. They are changing cows almost twice as fast as is the average dairyman. They depend more on purchased cows than do those who get poorer returns. This is exactly contrary to the popular statement that in order to be successful a dairyman must depend on the calves raised by himself.

By purchase and by heifers raised the farmers who got returns of less than $76 per cow replaced one seventh of the herd in the year. Those who got returns of $76 to $100 replaced one fifth of the herd. Those who got returns of over $100 replaced over one fourth of the herd (28 per cent) in the year.

Sixty per cent of the farmers who received over $100 per cow kept pure-bred and 30 per cent kept high-grade Holstein bulls. The proportion of pure-bred and high-grade bulls decreased as the receipts per cow decreased.

Some farmers are selling the wrong kind of dairy product. A few farmers are making butter on the farm to be sold at wholesale prices. Few of these are getting good returns per cow or are making good labor incomes if they depend very largely on the dairy. It is very difficult to make a profit from homemade butter sold at ordinary prices. Those who sell to creameries to be made into butter are doing better, but the returns from this source are not very high. When one lives near enough to a milk-shipping station or lives on a milk route so that the milk can be hired hauled, market milk usually pays best. However the product is sold, if the receipts are not $75 to $100 per cow the farmer should study his dairy conditions in order to see whether he can increase the returns, and if they cannot be increased he may well question the advisability of continuing in the dairy business. Near New York City, where feed and milk are both higher in price, the returns should be better in order to make the business pay.

There is a much greater variation in the production per animal than in the crop yields on different farms. The farmer has a much fuller control of the factors that determine the production of the animals than of those that determine the crop yields. If a farmer does his part in selection, care, and feeding, he may expect returns from his animals of nearly double the average. But whatever one may do, his crops may be limited by drought, frost, or other unfavorable conditions that are beyond his control. Because of these uncertainties, a good farmer usually finds that it pays to do his part for a production per animal of at least fifty per cent above the average, while he may not strive for crops that exceed the average by more than half this amount.

For further discussion of this and the returns from other kinds of animals, see Bulletin 295 of this station, pp. 473–502.

Relation of size of farm, crop yields, and receipts per cow to profits. The effect of various combinations of good and poor crops with large and small farms has been shown on pages 605–606. When we add the third factor of good cows, a still more striking correlation is shown. Table 20 gives such a comparison.

TABLE 20. RELATION OF SIZE OF FARM, RECEIPTS PER COW, AND CROP YIELDS, TO LABOR INCOME ON 585 FARMS WITH SIX OR MORE COWS, JEFFERSON COUNTY, NEW YORK

	Acres		
	100 or less	101–150	Over 150
	Labor income	*Labor income*	*Labor income*
Receipts per cow $50 or less			
Crop index 85 per cent or less	$308	$273	$331
Crop index 86–115 per cent	381	482	424
Crop index over 115 per cent	158	415	413
Receipts per cow $51–$75			
Crop index 85 per cent or less	304	590	669
Crop index 86–115 per cent	437	653	1017
Crop index over 115 per cent	537	636	1161
Receipts per cow over $75			
Crop index 85 per cent or less	594	935	1233
Crop index 86–115 per cent	641	1038	1148
Crop index over 115 per cent	659	1124	1291

Each of the factors is of great importance. Size of farm and receipts per cow are about equally important. Each of them is more important than yields per acre in Jefferson County. Raising the cows from the middle to the best group has the same effect as raising the size of farm from the middle to the largest group. The crops must be changed from the lowest to the best class in order to have an equal effect.

No one of the factors results in a good labor income if the other factors are poor. A combination of good cows and good crops with a small farm does not give a good labor income, but of course is better than a small farm with poor cows and poor crops. A large farm does not bring good results if the cows and the crops are poor. There are seven different combinations that resulted in average labor incomes of over $1000:

A large farm with medium cows and medium crops.
A large farm with medium cows and good crops.
A medium-sized farm with good cows and medium crops.
A medium-sized farm with good cows and good crops.
A large farm with good cows and poor crops.
A large farm with good cows and medium crops.
A large farm with good cows and good crops.

Of course the farms that had good cows, good crops, and a large area did best.

PROPORTION OF INCOME FROM CASH CROPS AND FROM ANIMALS

Relation of cash crops to profits. Farmers who maintain a good balance between cash crops and animal products make more than do those who go to either extreme. In Jefferson County those who sold no crops made little more than half as much as did those who derived half their income from cash crops. But those who derived more than 60 per cent of their income from the sale of crops also made less than did those who kept a good balance, as is shown in Table 21. The returns per cow are much better on the farms that derive the least from cash crops, so that the better returns on the diversified farms are in spite of the

TABLE 21. RELATION OF PROFITS TO PROPORTION OF THE INCOME FROM CROPS. 670 FARMS, JEFFERSON COUNTY, NEW YORK

Per Cent of Receipts from Crops	Average Per Cent from Crops	Number of Farms	Receipts per Cow from Milk and its Products	Work Units per Man	Labor Income
0	0	81	$61	243	$412
10 or less	4	201	65	248	546
11–20	16	111	60	247	653
21–40	30	180	57	252	692
41–60	49	65	50	236	781
Over 60	76	32	32	168	536

poorer cows. Cash crops, therefore, appear to be even more important than the table indicates.

The poorer the cows, the more important it is that crops be sold. The farmers who have the best cows sell the least crops. But even with the best cows, those who sell some crops are doing better than those who sell no crops, as is seen in Table 22. The

TABLE 22. RELATION OF RECEIPTS PER COW AND CASH CROPS TO PROFITS ON 585 FARMS WITH SIX OR MORE COWS, JEFFERSON COUNTY, NEW YORK

Per Cent of Receipts from Crops	Receipts per Cow from Milk and its Products		
	$50 or less	$51–$75	Over $75
	Labor income	*Labor income*	*Labor income*
No crops sold	$56	$571	$926
1–20 per cent	311	589	962
21–40	426	947	1183
41–60	554	1366	——[1]
Over 60	599	——[1]	——[2]

conclusions agree with the results for Tompkins and Livingston counties. (See Bulletin 295 of this station, pp. 503–510.)

[1] Only two farms in this group. [2] No farms in this group.

The amount of capital must also be considered in determining the amount of animal products to sell. Table 23 shows that the

TABLE 23. RELATION OF CAPITAL TO CASH CROPS. 578 FARMS, LIVINGSTON COUNTY, NEW YORK

Capital	Per Cent of Receipts from Crops	Per Cent of Receipts from Stock and Stock Products
$5000 or less	73	27
$5001–$7500	68	32
$7501–$10,000	65	35
$10,001–$15,000	65	35
$15,001–$20,000	55	45
Over $20,000	43	57

farmers with small capital are selling more crops, and that as the capital increases, the sales of animal products become more important.

In each capital group there are farmers who are trying all degrees of live-stock and crop farming. Table 24 shows that with

TABLE 24. RELATION OF CAPITAL AND CASH CROPS TO PROFITS. 578 FARMS, LIVINGSTON COUNTY, NEW YORK

Per Cent of Receipts from Crops	Capital		
	$5000 or less	$5001–$15,000	Over $15,000
	Labor income	*Labor income*	*Labor income*
20 or less	$253	$399	$1000
21–40	181	411	1399
41–70	256	624	1038
71–90	424	623	1194
Over 90	231	497	473

small capital those who depend largely on cash crops make the most, while with larger capital those who derive only 21 to 40 per cent of their income from crops are doing best. This is what one would expect. Live-stock represents added capital after one has bought and equipped his farm. If one is short of money, the absolutely essential things are land, machinery, and horses.

One may get along without live-stock, but one cannot farm without land and equipment. The majority of farmers understand this principle. When they get more money, they increase the amount and improve the quality of their live-stock.

Acres of crops per animal unit. Another way of comparing farms is on the basis of number of acres of crops grown for each animal unit kept. An animal unit is a cow or a horse, or the equivalent in young stock or other animals, as defined on page 587. Crops grown include all harvested crops, but do not include pasture or woods. All the farmers had pasture in addition. In Jefferson County there were no farmers who kept more than one animal unit for each acre of crops grown. More than half of the farmers kept an animal unit for each 1 to 3 acres of crops. The farms that were most heavily stocked secured the best crop yields, but did not make the best labor incomes. The best labor incomes were made by those who did not go to either extreme — the ones who had their farms moderately well stocked, as is shown in Table 25. Some of the reasons for the better results by those who avoid either extreme will be given later.

TABLE 25. RELATION OF ACRES OF CROPS PER ANIMAL UNIT TO LABOR INCOME AND CROP YIELDS. 670 FARMS, JEFFERSON COUNTY, NEW YORK

Acres of Crops per Animal Unit	Number of Farms	Crop Yields compared with Average of Region (Per cent)	Labor Income
1.0–2.0	165	123	$580
2.1–3.0	229	104	597
3.1–4.0	131	93	601
4.1–5.0	64	88	721
Over 5.0	81	91	627

The amount of stock that it pays to keep of course depends on the returns that one gets from it. With very poor stock, the less one has the better. The better the stock, the more heavily the place should be stocked. With good stock in Jefferson County, it pays best to have an animal unit for each 3 to 4 acres of crops

(Table 26). The exact amount to keep will of course vary in different regions and on different farms, but nearly always a diversified farm pays better than does a farm that goes to either extreme.

TABLE 26. RELATION OF ACRES OF CROPS PER ANIMAL AND RECEIPTS PER ANIMAL UNIT TO LABOR INCOME. 670 FARMS, JEFFERSON COUNTY, NEW YORK

Acres of Crops per Animal Unit	Receipts for Each Animal Unit except Horses		
	$50 or less	$51–$75	Over $75
	Labor income	*Labor income*	*Labor income*
1.0–2.0	$210	$649	$895
2.1–3.0	264	680	971
3.1–4.0	314	763	1053
Over 4.0	378	824	914

Reasons for larger profits on diversified farms. There are many reasons why it does not pay to go to the extreme either way. Ordinarily a man can raise feed for more cows than he can milk. If each man milks 10 to 15 cows, he can raise the hay and silage for these cows and part of the grain, and in addition will have time to raise hay, potatoes, cabbage, or other crops for sale. If the cows are so poor, or prices of the product so low, that the cows do not pay a good price for their feed, it is of vital importance that cash crops be raised. Even if the cows are so profitable that they pay more than market price for their feed, it still pays to raise cash crops, because these crops can be raised at very little additional cost. It might be suggested that more cows be kept to eat the additional crops, but this calls for more men who in turn can raise additional crops, for practically always the men can raise more crops than enough to feed the cows that they can milk. This question is fully discussed in Bulletin 295 of this station, pp. 506–524.

There are other reasons why diversified farms pay best. If a dairyman keeps all the cows he can feed in a good year, he will have to buy hay in a poor year. On such years hay is usually very high in price, but the price of milk usually does not change

much. Either he must buy high-priced hay or sell some of his stock. It usually pays to keep no more stock than one can raise hay and silage for in a rather poor year. This allows some roughage to sell in good years. Hay and roughage are so expensive to handle that one must study his conditions carefully before he decides to buy hay regularly. Diversified farming lessens the risk.

If a farm is too heavily stocked, the returns from manure are not so good. The thinner manure is spread, the more the returns per load of manure. At the Pennsylvania Experiment Station a test of this has been running for many years. Manure is applied every other year at the rates of 6, 8, and 10 tons per acre. For twenty-five years the average values of the increased crop per ton of manure were [1]

6 tons applied every two years	$2.16 per ton
8 tons applied every two years	1.66 per ton
10 tons applied every two years	1.44 per ton

A similar test is being conducted in Ohio. Manure is applied once every three years. The average value of the increased crops per ton of manure for seventeen years were [2]

4 tons applied every three years	$3.48 per ton
8 tons applied every three years	2.70 per ton
16 tons applied every three years	2.24 per ton

An animal unit usually produces a little over a ton of manure a month. Much of this is produced at pasture. If all the manure around the barns is saved, it will usually amount to 6 to 9 tons per animal unit kept on a New York farm. If an animal unit is kept for each three acres of crops, and if all the manure is saved, there will be enough to cover all the cropped land with about 6 to 9 tons per acre every three years.

A very large amount of the manure is lost, so that what should be one of the important returns from live-stock becomes of less consequence. Some persons who would not think of selling hay, for fear of losing fertility, will allow half the manure that they

[1] Pennsylvania Agr. Exp. Station, Bulletin 90, p. 23.
[2] Ohio Agricultural Experiment Station.

get from feeding it to be wasted. The farm is no better off than it would be if they sold half the hay and saved all the manure.

A large proportion of the animal products that go on the market are produced from low-grade feed. Animals are kept to fill out the year's work. Stock is often kept in order to make use of pasture land that could not otherwise be used. Much of the work is sometimes done by women and children. For all these reasons, live-stock is produced on a close margin of profit. The results of cost accounts show that, for the time spent, crops usually give much higher pay for a day's work than do animals. It usually pays to spend at least part of the time raising cash crops that pay good returns for a day's work.

If one goes to the other extreme and keeps no animals or too few animals, he will not have a full year's work. Animals help to provide winter work. Table 21 shows that when over 60 per cent of the money comes from cash crops, a man accomplishes only two thirds as much in a year as he does when more animals are kept. It is best to raise cash crops when they pay well, but the year should be filled out with other work even if the pay per day is less.

Every farm has a considerable amount of low-grade hay, mixed hay, and other products that do not have much market value or that are too bulky to pay to sell. At least enough stock should be kept to make use of these low-grade products. On most farms there is some land that will not pay for farming but that will bring some income as pasture land.

Whatever explanation one may make of the reasons for diversified farming, the facts remain the same. In every county studied, the persons who have a good balance between cash crops and animal products are making more than are those who go to either extreme. Usually, in New York, 20 to 40 per cent of the receipts should be from the sale of crops. The more money one has and the more profitable his animals are, the nearer he should come to an exclusively stock farm, but it rarely pays to stop selling at least one cash crop. The less money there is available and the poorer stock pay, the fewer one should keep, but it rarely pays to sell nothing but crops even on a truck farm.

Usually a farm should have two to four important products, and usually at least one of these should be an animal product and at least one should be a cash crop. Diversified farming is often spoken of as farming where one has a little of everything. The writer doubts the value of an indefinite collection of things all so small that they are likely to be more or less neglected, but all investigations indicate the desirability of having two to four products to sell, each one of which is so important that it is not neglected.

IMPORTANCE OF A WELL-BALANCED FARM

All the preceding discussions indicate that it is not merely good cows, good crops, and a good-sized farm that need attention, but that when one has improved one of these he should give attention to the others. Farmers are just like all other persons — they are likely to have hobbies. The man with good cows is likely to become so proud of his cows that he neglects his crops. The man with good crops sometimes neglects his stock. Very often attention is given to increased production when a larger business is the most important point to be considered.

There are very few farms that are good in each of the above three points. In the region in Jefferson County there were 16 farms that had receipts per cow of $75 or more, that raised 100 acres of crops or more, and that had crops as good as, or better than, the average. The average labor income on these farms was $1497. The lowest labor income was $733.

In order to have a figure that will compare farms when size, receipts per cow, and crop yields are given equal weight, a figure was calculated for each farm representing its comparison with the average farm. The average size is called 100 per cent. The average receipts per cow and the average crop yields were each called 100 per cent. On this basis the percentages representing size of farm, receipts per cow, and crop yields for each farm were calculated. These three percentages were then multiplied together to get a single figure representing the farm.[1] If a farm is of

[1] In making this calculation a much shorter way of calculating was used, but the method given above shows the principles involved.

average size, gets average crops, and has cows twice as good as the average, it is represented by 200 per cent. If a farm has average crops and is twice as large as the average, but has cows only half as good as the average, it is represented by 100 per cent. Table 27 shows a comparison of farms sorted in this way.

TABLE 27. COMPARISON OF FARMS WHEN AREA, CROP YIELDS, AND RECEIPTS PER COW ARE GIVEN EQUAL CONSIDERATION. AVERAGE FARM EQUALS 100 PER CENT. JEFFERSON COUNTY, NEW YORK

Comparison with Average (Per cent)	Number of Farms	Labor Income
30 or less	57	$95
31–40	45	182
41–50	58	221
51–60	56	300
61–70	62	390
71–80	56	507
81–90	38	568
91–100	34	644
101–200	199	842
Over 200	62	1596

SOME TYPICAL FARMS

If any further proof is needed to show that the four points thus far discussed are the primary ones that determine the profits on most farms, it is furnished by the fact that, when these four points are given, one can estimate the labor income with approximate accuracy in about 80 per cent of the cases. There are many other things that may influence profits, but the fact is that, in the majority of cases, no other point does have an influence strong enough to overcome the effect of these four things. Of course, the other factors cause minor variations on all farms. A few examples from Jefferson County will illustrate the point. The average farm had 73 acres of crops, received $59 per cow from milk and its products, derived 22 per cent of the income from the sale of crops, and made a labor income of $609.

Farm 1 :

Acres of crops, 29; very poor
Yields compared with average, 208 per cent; excellent
Receipts per cow from 11 cows, $116.; excellent
Percentage of receipts from crops, 21 per cent; excellent
Labor income, $980

This is the best record for either a general or a dairy farm with so small an area. It represents the best record of a "little farm well tilled." Splendid crops, splendid cows, good diversification, and all the work done by the farmer himself with two months of hired labor. It would be very hard to give any suggestions for improvement except that the farm be enlarged. Such a farmer should be able to make a labor income of $3000 a year if he bought or rented enough more land so that he could raise 100 more acres of crops. He would then keep more cows and keep two men by the year.

Farm 2 :

Acres of crops, 21; very poor
Yields compared with average, 211 per cent; excellent (hay, 3.3 tons; silage, 13 tons)
Receipts per cow from 8 cows, $90; excellent
Percentage of receipts from crops, 22 per cent; excellent
Labor income, $380

This farmer had a little less land, had fewer and not quite so good cows, and kept a hired man by the year. For these reasons he made less than the preceding one.

Farm 3 :

Acres of crops, 133; good
Yields compared with average, 75 per cent; poor (hay, 1.1 tons; oats, 25 bushels)
Receipts per cow from 20 cows, $95; excellent
Percentage of receipts from crops, 16 per cent; fair
Labor income, $1661

This farmer gets crops only three fourths as good as the average, but with the large area he should make a fair profit from growing them. He sells part of his crops and gets good returns for what he feeds to cows. His crops are about one third as good

as those of the first two farms, but the larger area much more than makes up the difference. With crops as good as his neighbors, he might readily bring his labor income to $2000 or more. The next farm shows what might be expected with better crops.

Farm 4 :

Acres of crops, 110; excellent
Yields compared with average, 142 per cent; excellent
Receipts per cow from 26 cows, $96; excellent
Percentage of receipts from crops, 19 per cent; excellent
Labor income, $2239

This farm is excellent in every particular. We should expect it to make a labor income of over $2000, as it does. The reason why it makes more than the preceding farm is because of better crops.

Farm 5 :

Acres of crops, 109; excellent
Yields compared with average, 120 per cent; excellent
Receipts per cow from 32 cows, $56; poor
Percentage of receipts from crops, 4 per cent; poor
Labor income, minus $113

This farmer made very good profits on his crops, of which he had a good acreage. But he fed these crops to cows that did not pay for their feed. If he had sold most of his crops he would have done well. The farm is too heavily stocked even for good cows. Fewer and better cows and the sale of more cash crops would readily make the labor income $1500, but as it is, the farmer did not even make interest on his capital. He paid for the privilege of working.

Farm 6 :

Acres of crops, 112
Yields compared with average, 104 per cent
Receipts per cow, $76
Percentage of receipts from crops, 27 per cent
Labor income, $1035

This farm is making much more than the average by having a little more crops and having cows much better than the average. The crop yields, returns per cow, and area in crops could all be

increased to advantage. Unless better cows are kept, it might pay to sell more crops, but an improvement in cows would be better. The following farm shows what might be expected with a larger area in crops:

Farm 7:

Acres of crops, 253
Yields compared with average, 104 per cent (hay, 1.4 tons; oats, 37 bushels; silage, 12 tons)
Receipts per cow from 30 cows, $75
Percentage of receipts from crops, 48 per cent
Labor income, $2859

The primary difference from the preceding farm is in having over twice the area in crops. It makes over twice the labor income. The crop yields and the receipts per cow should be improved. The next farm shows what might be expected with better crops:

Farm 8:

Acres of crops, 259
Yields compared with average, 134 per cent
Receipts per cow from 32 cows, $74
Percentage of receipts from crops, 53 per cent
Labor income, $3270

In three counties, this is the second highest labor income found for any farmer who sold milk at wholesale prices. The one point in this farm that needs strengthening is the returns per cow. The farm that made a better labor income had better cows.

THE MOST SUCCESSFUL DAIRY FARMS

In the 16 townships studied in Tompkins, Livingston, and Jefferson counties, there were 23 farms that sold milk at wholesale and that made labor incomes of over $2000. The averages for these farms are given in Table 28.

These farms had an average of 257 acres, 154 of which were in crops. The smallest one had 144 acres of land, with 81 acres in crops. The largest had 487 acres of land, with 286 acres in crops. They kept an average of 32 cows. On the average they

furnished work for 3.2 men, including the operator. Their average capital was $19,728.

They derived one third of their income from the sale of cash crops. None of them was an exclusively dairy farm. Only one derived less than one sixth of the income from cash crops. This one raised all the feed used, and sold $275 worth of crops.

The crop yields averaged nearly one fifth better than the neighbors' crops. Only 6 of the 23 farms had crops poorer than the average.

The receipts per cow from the sale of milk averaged $98. Only one farm had cows as poor as the average.

The majority raised their own cows, but 11 of the 23 bought some cows. Four depended entirely on purchased cows, and four others purchased more cows than they raised.

Six bought no feed of any kind. Nine bought less than $10 worth per animal unit kept. Seven bought $10 to $20 worth and one bought over $20 worth per animal unit. The amount spent for feed averaged $7 per animal unit. All these farms are in regions well adapted to crop-raising. Dairymen nearer New York City buy more feed because the amount of land that is well adapted to raising feed is very limited.

Eighteen of the 23 farms raised silage, 15 raised corn for grain, all raised hay, 21 raised oats, 13 raised wheat, 2 raised buckwheat, 5 raised cabbages, 10 raised beans, 11 raised four or more acres of potatoes. The average yields for the farms growing each of these crops are given in Table 28. Apples and some other crops were raised by a few of the 23 farmers.

The amount of work accomplished per man and per horse was much above the average. The cost of machinery per acre of crops was lower than the average. The proportion of capital invested in houses and barns was lower than the average, as was the value of barns per animal unit. By comparing with Tables 8, 9, 11, and 12, it will be seen that in each case these differences are due to the size of farm, as these farms correspond very closely with the average for the large farms.

The primary difference between these successful farms and the average large farm is in the receipts per cow and the crop

yields. Being large farms, they have the many advantages of such farms. They combine good production and diversification with these advantages.

EFFICIENCY FACTORS

Table 28 gives some of the more important efficiency factors for each county. It also includes similar factors for the 23 most successful dairy farms that sold market milk at wholesale. By the use of these and similar factors for other points, and with the other knowledge gained from the study of the records of large numbers of farms, it is possible to analyze the farm business and see which points are most in need of attention and which things are already good. When studying a particular farm, reference should also be made to the other tables in order to see whether the conditions on the farm are due to good or bad management or whether they are the natural results for a farm of the same size. Comparison is also made with farms having the same receipts per cow, crop yields, and other factors.

CONCLUSIONS

Of course, there are other important factors for success in farming, but on the great majority of farms the area in crops, the yield of these crops, the returns per animal, and the diversity of the business are the most important factors. Mistakes can, of course, be made on many other things. But the practical farmer who has these four factors good rarely makes such serious mistakes on other things as to fail to do well.

For efficient farming in New York an investment of $10,000 to $20,000 is usually necessary. In states where land is higher in price a larger amount is needed. Occasionally a farmer does well with a capital of $5000 or even less, but such instances are not numerous. With less than $10,000 it is usually necessary to work with very inadequate equipment, poor stock, and too little land. The capital need not all be owned by the farmer. The land and some of the stock may be furnished by a landlord, so that the tenant farmer need not have a very large capital.

TABLE 28. EFFICIENCY FACTORS. AVERAGES FOR TOMPKINS, LIVINGSTON, AND JEFFERSON COUNTIES, AND FOR 23 MOST SUCCESSFUL FARMS SELLING MILK AT WHOLESALE

	Tompkins County	Livingston County	Jefferson County	Twenty-three most Successful Wholesale[1] Milk Farms
Labor income	$445	$666	$609	$2658
Size of business				
Capital	$5712	$12,037	$9006	$19,728
Area (in acres)	108	149	143	257
Acres in crops	57	93	73	154
Number of work horses and mules	3.1	5.6	3.4	7.4
Number of cows	8	9	15	32
Number of other animal units	5	9	6	8
Total animal units	16	23	24	47
Number of men including operator[2]	1.5	2.2	1.7	3.2
Productive units of man work	301	479	421	942
Productive units of horse work	177	337	219	550
Production				
Crop yields compared with average (per cent)	100	100	100	119
Corn (bushels per acre)	29.5	39.6	36.4	48.0
Corn silage (tons)		9.8	9.9	11.8
Oats (bushels)	32.4	41.1	30.8	43.0
Wheat (bushels)	20.9	18.5	19.8	23.5
Buckwheat (bushels)	16.6			21.4
Timothy and clover hay (tons)	1.3	1.42	1.44	1.59
Potatoes (bushels)	122	106	124	153
Beans (bushels)		15.9	18.0	21.6
Cabbage (tons)		6.18	8.34	10.3
Pounds of milk sold per cow				6470[3]
Receipts per cow from milk and its products	$53	$57	$59	$98
Receipts per cattle unit	$52	$52	$57	$92
Receipts per sheep	$5.18	$4.87	$8.91	$5.33
Receipts per animal unit except work animals	$52	$50	$61	$90
Percentage of receipts from crops	40	58	22	34
Efficiency in use of labor				
Crop acres per man	38	42	43	48
Animal units per man	11	10	14	15
Productive work units per man	201	218	248	294
Crop acres per horse	18	17	21	21
Productive work units per horse	57	60	64	74
Efficiency in use of capital				
Value per acre	$43	$72	$51	$62
Percentage of area in crops	53	62	$51	60
Value of houses		$1658		$2238[4]
Percentage of capital in houses		14		11
Value of barns		$1603		$2663[4]
Percentage of capital in barns		13		14
Value of barns per animal unit		$70		$57
Percentage of capital in all buildings	45	27		25
Value of machinery	$407	$583	$482	$968
Value of machinery per acre of crops	$7.14	$6.27	$6.60	$6.29
Fertility				
Crop acres per animal unit	3.6	4.0	3.0	3.3
Amount spent for fertilizers	$15	$51	$10	$39
Cost of fertilizers per acre of crops	$0.26	$0.55	$0.14	$0.25

One who owns a farm may borrow part of his capital or may own some land and rent additional land.

Most of the profitable general or dairy farms have 150 to 300 acres of land, with 100 to 200 acres of crops. For these kinds of farming, 80 to 100 acres of crops is about the minimum area that will make good use of a fair equipment and the horses that go with it. Better equipment can be used and very much better use of it can be made with 150 acres of crops. With these types of farming, 600 acres is about the limit that can be run from one center, and it is not often that such a large area can be handled to advantage. When public welfare and the prosperity of the farmer are both considered, farms of 150 to 300 acres seem to be the best size for general and dairy farms. In regions where less than half the land is tillable a correspondingly larger area is needed. If a farmer does not have land enough and if he cannot buy more, it is often possible to rent additional land so that he can get full use of his horses, machinery, and labor.

Some farmers whose crops are below the average do very well, but those who make the highest profits usually have crops that are better than their neighbors raise. Apparently it pays to raise crops at least a fifth better than the neighbors raise on the same soil.

On dairy farms there is no factor more important than the receipts per cow. In the three counties studied, the cows must be about a half better than the average if they are to contribute to the success of the farm. The most successful farmers usually get returns from a half better to nearly twice as good as the average.

A well-balanced combination of cash crops and live-stock usually pays better than does either extreme. The best combination varies with the amount of money that the farmer has, with the

[1] Three other dairy farms that sold milk at wholesale and that made over $2000 labor income were omitted. One derived nearly all its income from buying and selling cattle. One made most of the income from pure-bred stock. One was really a crop farm.

[2] Work of women and children is included on the basis of the time that it would take a man to do the same work.

[3] This is in addition to milk used in raising calves and milk used in the house. The total production probably averages nearly 7000 pounds.

[4] Values of houses and barns for 16 of the 23 farms.

quality of the live-stock kept, and with the profits that come from crops. Even with very profitable live-stock it nearly always pays to have some cash crops. One should be very sure that he is right before he allows the sale of cash crops to drop below a fifth of his total sales. On the other hand, unless the returns from live-stock are very poor or unless the amount of money is very limited, it usually pays to get at least half of the income from stock.

Ordinarily there should be three or four important products sold — that is, three or four products, no one of which is neglected because of the others.

The highest excellence in one particular does not insure a good income. No matter how good the cows and crops, if the farm is too small the income is not likely to be large. With a large farm and good crops, the returns will not be good if the crops are fed to live-stock that brings poor returns.

If a farmer is doing well in one of the above points but not so well in some of the others, he is likely to get greater returns for a given effort by strengthening the weak points rather than by spending more effort on the thing that is already good. It is better to have a well-balanced farm than to excel ever so much in one particular and neglect other equally important points.

Other points often prevent the profits from rising as high as they might go if the entire business were well balanced. The wrong kind of farming is sometimes followed. Inconvenient buildings, a poorly-laid-out farm, or failure to plan the work ahead may lose time. There may be too much or too little equipment. Occasionally too much is invested in buildings or too many horses are kept, or any one of many other factors may be wrong. But in the great majority of cases, if the four factors here emphasized are good the other mistakes made by experienced farmers are not sufficient to prevent at least a fair profit. When these four points are good, a mistake in having an extra horse or in wasting some time will still leave a profitable farm, although not so profitable as it might otherwise have been.

Every farmer will do well to compare his farm with the averages for Tompkins, Jefferson, and Livingston counties (p. 626).

He should strive to have his farm better than the average in every point. Particular attention should be given to anything in which his farm falls below the average. A careful farmer may hope for crop yields a fifth better than the average and production per animal a half better than the average. With these conditions and a good-sized farm, he may hope for a labor income of two to five times the average after he gets his business established. In order to help the farmer in making such a study, the Department of Farm Management at Cornell University will send blanks on request to any farmer who desires to calculate his labor income. The record of the business for a year can be filled in and the blank be returned to the department. Various factors will be calculated and returned to the farmer for study, or the farmer may make these calculations for himself.

The success of a farm is primarily dependent on the factors emphasized in this bulletin. But success of an individual is primarily dependent on the relation of his income to his family expenses. The highest financial success comes when a well-balanced, successful farm is combined with reasonable economy in living.

THE FARMER'S INCOME[1]

By W. J. Spillman, Agriculturist in Charge of the Office of Farm Management

INTRODUCTION

IT HAS never been possible to secure accurate data on the average income of American farmers. It happens, however, that the data collected in the census of 1910, combined with certain factors worked out in the experience of the Office of Farm Management in conducting farm-management surveys, render it possible to arrive at a sum which, if increased by two small unknown items, and decreased by one rather large but unknown item, would represent the farmer's net income. The two additions probably do not balance the one deduction, so that the actual net income is almost certainly less than the sum given in the table.

LABOR INCOME OF FARMERS IN THE UNITED STATES

Page[2]	Item	Total	Amount per Farm
268	Number of farms	6,361,502	138.1 acres[3]
269	Improved land	478,451,750 acres	75.2 acres
276	Total farm investment	$40,991,449,090	$6443.67
277	Investment in farm buildings	$6,325,451,528	$994.33
277	Investment in implements and machinery	$1,265,149,783	$198.88

[1] Issued July 19, 1913.

[2] Abstract of Thirteenth Census.

[3] Average total area per farm.

[4] Four and one-half per cent in New England, New York, Pennsylvania, Michigan, and Wisconsin; 5 per cent in Virginia, West Virginia, Illinois, Missouri, Kansas, Iowa, Nebraska, Minnesota, North Dakota, South Dakota, Ohio, and Indiana; 5½ per cent elsewhere.

[5] Includes unpaid family labor and all the farm furnishes toward the family living except milk and cream. Does not include income from outside sources, and the amount paid for live stock bought must be deducted from this sum.

LABOR INCOME OF FARMERS IN THE UNITED STATES (CONTINUED)

RECEIPTS

PAGE	ITEM		TOTAL	AMOUNT PER FARM
348	Dairy products (excluding milk and cream used at home)		$596,413,463	$93.75
352	Wool		65,472,328	10.29
352	Mohair		901,597	.14
355	Eggs produced		306,688,960	48.21
355	Poultry raised		202,506,272	31.83
356	Honey and wax		5,992,083	.94
358	Domestic animals sold		1,562,936,694	245.69
358	Domestic animals slaughtered		270,238,793	42.48
370	Total value of all crops	$5,487,161,223		
379	Corn	$1,438,553,919		
383	Oats	414,697,422		
388	Barley	92,458,571		
397	Hay, etc.	824,004,877		
	Total value of crops used for feeding	2,769,714,789		
373	Feed sold	509,253,522		
	Net value of crops fed	2,260,461,267		
	Net value of crops		3,226,699,956	507.22
	Total gross farm income		6,237,850,146	980.55

EXPENSES

373	Labor	$651,611,287	$102.43
373	Fertilizers	114,882,541	18.06
373	Feed	299,839,857	47.13
	Maintenance of buildings (at 5 per cent) [4]	316,272,576	49.72
	Maintenance of implements and machinery (20 per cent)	253,029,956	39.78
	Taxes (0.6 per cent)	245,948,694	38.66
	Total	1,881,584,911	295.78
	Miscellaneous expenses (15 per cent of other expenses)	282,237,736	44.37
	Total expenses	2,163,822,647	340.15

SUMMARY

Total gross income	$6,237,850,146	$980.55
Total expenses	2,163,822,647	340.15
Net farm income	4,074,027,499	640.40
Interest on investment (at 5 per cent)	2,049,572,454	322.18
Labor income [5]	2,024,455,045	318.22
Interest on mortgage ($1715 at 6 per cent)		102.90
Available for purchase of live stock and for family living		537.50

The items of income about which no information is available are the value of the milk and cream consumed on the home farm and what the farmer earns for work outside his farm. In some regions this latter item is important. Thousands of farmers receive a large part of their income from labor done for others at times when they do not have profitable employment on their own farms. In other sections of the country this item is unimportant.

The item of expenditure about which no information is obtainable is the amount paid for the live stock purchased. This is a very important item in those sections of the country where the fattening of stock is practiced. It is also a considerable sum in dairy regions, but in regions where no live stock except work animals and a few head of miscellaneous stock are kept it is not very important.

It is probable that the average working life of a horse is from eight to ten years. The average depreciation on work horses would then be from about 12 per cent to 10 per cent annually. Where work horses are the only animals kept, the expenditures for the purchase of live stock would therefore probably not average more than $15 or $20 per year per animal. It is impossible to give even a rough estimate of their cost in regions where live stock represent an important farm enterprise. The data presented in the accompanying table should be interpreted in the light of these omissions.

THE AVERAGE FARM INVESTMENT

The average area of the American farm in 1910 was 138.1 acres. Of this area 75.2 acres are classed as improved land. The average area devoted to crops is 49.77 acres. The total average investment per farm is $6443.67, the amount in farm buildings being $994.33 and that in implements and machinery $198.88.

RECEIPTS

The data for the receipts of the farmer are obtained entirely from the census returns. In this calculation the farm is credited with the total value of dairy products, wool, mohair, eggs and

poultry, honey and wax, and domestic animals sold and slaughtered, with the exception of the milk and cream consumed on the farm where it is produced. This latter item is not given in the census returns. Whatever its value it should be added to the farm income.

The farm is also credited in the table with the total value of all the crops produced except that part fed to live stock. This valuation is arrived at in the following manner:

The amount of corn, oats, barley, hay, and forage sold is deducted from the total value of these crops, it being assumed that the remainder is fed on the place and accounted for in the live-stock product listed earlier in the table. The value of that portion of these crops which is fed to live stock is then deducted from the total value of all the crops, the remainder being credited to the farm. The farm is thus credited with the butter, cheese, eggs, poultry, honey, meat, fruits, vegetables, bread, etc., consumed on the farm where it is produced, and the value of these products thus consumed on the farm is included in the farm income.

As stated already, any income the farmer may secure by work done outside his farm or from any other outside source is to be added to the net income given in the table.

EXPENSES

The only important item of expense not enumerated in the table is the sum expended annually in the purchase of live stock. Of the other expense items the amount for labor, fertilizers, and feed are given directly in the census returns.

The expense for the maintenance of buildings is placed at 5 per cent of the value of the buildings. This is only an estimate, but it is based on rather extensive investigations by the Office of Farm Management and is believed to be approximately correct.

The cost of maintenance (including repairs) of implements and machinery is placed at 20 per cent of their cash value. This estimate is based on extensive investigations by the Office of Farm Management and agrees with the estimate in Warren's

"Farm Management." Taxes are assumed to be six-tenths of 1 per cent as an average for the whole country. This item will, of course, vary in different sections.

There are numerous other items of expense in the conduct of a farm. In a number of farm-management surveys conducted by the Office of Farm Management these remaining items have amounted on the average to about 15 per cent of other expenditures, and this is the factor assumed in the calculations here made. The total farm expenses, omitting the item of live stock purchased, are $340.15.

THE FARM INCOME

The farm income is obtained by deducting the total expenses from the total receipts, and amounts to $640.40. If we assume 5 per cent as the rate of interest to which capital invested in agriculture is entitled, the farm income would then be distributed between interest and labor income as follows: interest on investment, $322.18; labor income, $318.22.

Out of the farm income as here calculated, increased by outside earnings and by the value of milk and cream consumed on the home farm, the farmer must pay interest on his indebtedness, pay for any live stock purchased, and provide the living expenses of himself and family. The average farm mortgage in this country, based on the number of all farms, is $1715, which at 6 per cent per annum amounts to $102.90. This amount deducted from the farm income of $640.40 leaves $537.50 (to which must be added the value of milk and cream consumed on the home farm and any income from outside sources) as the sum to be used in the purchase of live stock, in living expenses, and in savings.

In comparing the farmer's income with that of wage workers in any other industry it must be remembered that a majority of farmers are also capitalists. The interest on the farmer's capital thus constitutes a portion of this income, and this interest added to the small additional labor income he receives represents the sum available for his living. The labor income is undoubtedly

smaller than it otherwise would be if the farmer did not also have the interest on his capital. Thus, we have found that in the better agricultural sections the labor income of tenants is considerably higher than that of farmers who work their own farms, although the latter have larger incomes than the tenants when we take into account the interest on their investment.

A very large percentage of American farmers live on the interest of their investment and do not receive anything for their own wages. Where the farm is of considerable size, such farmers are able to live well, but on the small farm the interest on the investment is not sufficient to permit a high standard of living, so that the farmer must have some labor income in addition. The average income of the farmer could be increased by making the farms larger and thus reducing the number of individuals engaged in agricultural production. This could easily be done without decreasing production by better farm organization and the utilization of larger machinery and more power on the farm.

An average in itself has little meaning. In the present case, however, it is reasonable to infer that at least half of the farm families in this country have incomes smaller than those given in the table. Individual farmers here and there have incomes larger than this average, but the facts presented in the table indicate that on the whole the income of farmers in this country, even when we include as a part of the income those things consumed on the farm where they are produced, is certainly not more than sufficient to pay 5 per cent on the investment and ordinary farm wages for the labor they do, and it is probably considerably less than this.

PROFITS THAT FARMERS RECEIVE

By E. H. Thomson, Agriculturist, Bureau of Plant Industry, United States Department of Agriculture

(Reprinted from the *Annals of the American Academy of Political and Social Science*, November, 1913)

MANY wrong impressions prevail in regard to the real profits in farming. The consumer in the city believes that the farmer must certainly be growing rich. His impression is due to the fact that he has to pay high prices for the things the farmer sells. He little realizes the amount of capital and labor utilized in the production of these products, neither does he consider carefully the difference between the price the farmer receives for the quart of milk or bushel of potatoes and what the consumer pays.

Within the last few years the Office of Farm Management of the Bureau of Plant Industry, United States Department of Agriculture, has made certain investigations with the view of determining the profits in farming and those factors that seem to control them. These investigations, called farm-management surveys, were made in representative farming areas in seven states, the results from which, with those found by the New York State College of Agriculture at Cornell, give an excellent indication of the profits farmers receive for their year's work. Each district surveyed usually comprised a group of three or four townships and included all the farms within the area selected. In this way average conditions were studied, otherwise there would be a tendency on the part of the enumerator to select certain farms and pass by others. All data were collected by trained agricultural students working under the supervision of persons acquainted with the work and who exercised the utmost care to obtain accurate results.

A large number of farmers keep some sort of accounts, but very few keep complete records whereby all data needed in the

survey could be obtained. It has been the experience of those who had occasion to take a number of farm records that the farmer is able to give, and does give, a remarkably correct statement in regard to his financial business. As a rule a few important items constitute a large part of the farm receipts or expenses, and these items, when not well remembered, can often be checked up by the creamery or dealers' accounts. Where certain farmers will overestimate, others will underestimate, and the results averaged from 100 farms, or over, are approximately correct. An excellent illustration of the accuracy of results obtained in these surveys is given by Professor W. J. Spillman in Bureau of Plant Industry Bulletin 259 of the United States Department of Agriculture. He states as follows:

Among the several hundred farms included in the survey were 135 that sold milk to creameries. Each of these farmers was asked to give as accurate an estimate as possible of the amount of money he had received for this milk. After the survey was partially finished it occurred to the investigator that it would be possible to secure a check on the accuracy of these estimates by obtaining the actual figures from the creameries themselves. It was decided also to test in a similar manner the farmers' estimates of the quantity of milk each had sold to the creamery. The estimates as to quantity of milk sold were then obtained from the 79 farms visited after the decision had been reached to make this test. These farmers did not as a rule weigh their own milk and were not accustomed to dealing with weights as they were with sums of money; it was to be expected, therefore, that the estimates of quantity of milk sold would be less accurate than those of money received, and this was the case, as will be shown below. After obtaining the estimates from the farmers, the actual figures, both for weights of milk sold and for money received, were secured from the creameries that had purchased the milk.

Estimated pounds of milk sold (79 farms)	3,518,816
Actual pounds of milk sold (79 farms)	3,487,320
Difference	31,496
Estimated value of milk sold (135 farms)	$106,163.00
Actual value of milk sold (135 farms)	106,155.50
Difference	$7.50

It is seen that the error in the quantity of milk sold is a little less than 1 per cent of the whole. At the same time the individual estimates of pounds of milk sold were in error by amounts ranging from 40 per cent above to 36 per cent below the correct figures. In the total these errors tended to counterbalance each other, so that the sum of the estimates was quite accurate. In

the estimates of money, in terms of which the farmer is accustomed to reckon, the error in the total is less than one-hundredth of 1 per cent. These instances will serve to show something of the measure of accuracy attainable in the results of the farm-management surveys.

The results given in the following tables are only for one year in each region. The seasons and variation in prices will make an immense difference in the farmer's income, particularly in certain districts. In the areas studied, it is believed the conditions were fairly normal in all respects. Possibly the results from Iowa are 10 to 15 per cent too low, due to dry weather during the early summer affecting the corn yield. In Chester County, Pennsylvania, the incomes are possibly a little above normal, due to unusually high prices of hay and other roughage sold from the farm.

In Table I is given the capital invested, receipts, expenses, farm income and labor income of 2090 farmers operating their own farms. By farm capital is meant the average of two inventories of land, buildings, live stock, machinery etc., taken at the

TABLE I. AVERAGE CAPITAL, RECEIPTS, EXPENSES AND INCOME OF 2090 OWNER FARMERS

State	County	Year	Number of Farmers	Average Capital	Total Receipts	Total Expenses	Farm Income	Labor Income
Indiana	Clinton Tipton	1910	123	17,536	1876	689	1187	310
Illinois	Cass Menard	1910	73	51,091	5043	1866	3177	622
Iowa	Greene Guthrie	1910	77	23,193	2308	858	1450	290
Michigan	Lenawee	1911	300	11,756	1717	648	1069	481
Pennsylvania	Chester	1911	378	10,486	2448	1134	1314	790
Oregon	Marion Polk	1911	258	14,917	1722	715	1007	261
New Hampshire	Hillsboro	1908	266	5,350	1582	978	604	337
New York[1]	Tompkins	1907	615	5,527	1146	447	699	423
Average for 2090 farms				17,482	2230	917	1313	439

[1] Bulletin 295, Cornell University.

beginning and end of the farmer's fiscal year. Normal values (not assessed values) were used in all cases. The farm receipts represent the income from the sales of all products, labor performed by the farmer off the farm and gain from increased investment. No gain was allowed for increase in value of land unless justified by new buildings, drainage or other permanent improvements. The farm expenses include all such items as feed, seed, repairs, live stock, labor, taxes and insurance. In case the farmer's sons worked, but were not actually paid, the value of their labor was charged the same as if they had been hired. No charge is included in the expenses for the owner's labor, as his wages are represented in the labor income.

The difference between the farm receipts and expenses is called the farm income; this represents the combined earnings of the farmer's capital and his own labor. Assuming that the use of capital is worth 5 per cent and deducting the interest at this rate from the farm income, gives the farmer's labor income or the amount he receives for his year's work. This labor income represents the farmer's wages and profits, that is, if the farmer's labor income is $439, and his labor is worth but $300, his profits are $139. In other words, it is the amount left for his own labor and for profit in the business. In addition he had the use of a house to live in, and all those products furnished by the farm towards the family living, the most important of which are milk, eggs, meat, garden vegetables and fruit. In the farm receipts, no credit is given for these items consumed by the farmer and his family.

If the farmer is free of debt, thereby having no interest to pay, he will have in addition to his labor income the interest on his investment to use for living and savings. In regions where the farm capital is large, such as Illinois and other corn-belt states, the farmer will be able to live comfortably and yet have a minus labor income, the interest alone being sufficient to give him a good living. In fact many farmers live on the interest of their investment rather than on the real profits of their farms. Smaller farms and cheap land make the average farm investment much less in New York and New England. On such farms the amount

(farm income) available to the farmer to pay interest on mortgages and for living expenses is less than $700.

In Table II is given the distribution of labor incomes for the farmers in six states. Out of 1209 farmers who operated their own farms 5 per cent, or one in twenty, received over $2000 as a labor income. Twenty-three and six-tenths per cent failed to make a plus labor income.

Under normal conditions in the Northern states we are led to believe that about one-third of the farmers make less than $100 a year after the interest is counted on their investment. Severe weather conditions or low prices often result in heavy losses, and in many years only a few men receive a plus income. This condition is especially liable to occur in regions of specialized agriculture.

TABLE II. DISTRIBUTION OF LABOR INCOMES OF 1209 FARMS OPERATED BY OWNERS

States	Number of Farmers	Number making Minus Labor Incomes	Number making Incomes between $1 and $400	Number making Incomes over $2000
Indiana	123	32	52	2
Illinois	73	27	16	8
Iowa	77	30	19	2
Michigan	300	54	105	8
Pennsylvania	378	42	84	31
Oregon	258	100	80	11
Total	1209	285	356	62
Per cent of total		23.6	29.4	5.1

PROFITS THAT TENANTS RECEIVE

Approximately one farm in every three is rented (37 per cent in 1910, United States census), hence it is important that we know what the tenant farmer is receiving for his work. Unfortunately it is often assumed that all tenants are poor farmers and no credit is given them for the part they play in the agriculture of this country.

From a careful study of over 700 tenant farms, we are forced to conclude that the average tenant is a capable worker, utilizing

both land and equipment in an efficient manner. Naturally, not owning the land, we cannot expect him to use the greatest of care in maintaining the fertility. However, it would seem that the fault lies with the farm owner in not caring to give the time and supervision necessary to establish a proper system of rental.

In Table III are given the average capital, receipts, expenses and labor income, of *722* tenant farmers found in the same districts as the farmers operating their own land whose incomes are shown in Table I. Tenants working under both share and cash rental systems are included.

TABLE III. THE AVERAGE CAPITAL, RECEIPTS, EXPENSES AND INCOME OF 722 TENANT FARMERS

State	County	Year	Number of Farmers	Average Capital	Total Receipts	Total Expenses	Farm Income	Labor Income
Indiana	Clinton, Tipton	1910	83	1758	1335	492	843	755
Illinois	Cass, Menard	1910	71	2867	2257	975	1282	1139
Iowa	Greene, Guthrie	1910	93	2667	1605	755	850	717
Michigan	Lenawee	1911	153	1562	1111	450	661	583
Pennsylvania	Chester	1911	124	2244	1929	1026	903	791
Oregon	Marion, Polk	1911	64	2047	2068	940	1128	1026
New York[1]	Tompkins	1907	134	1281	814	371	443	379
Average for 722 farms				2061	1588	715	873	770

Inasmuch as land and buildings constitute from *75* per cent to 90 per cent of the total farm capital, the tenant's investment is necessarily small, there being very few tenants having over $5000 in working equipment. Hence the tenant's labor income must be large enough to give him his living, the interest on his investment being a very small item.

We have seen how a farm owner can make a minus labor income and still live, but the tenant must make wages or he cannot

[1] Bulletin 295, Cornell University.

live. The average labor income of the 722 tenants is $770, a much higher figure than one might expect. In these same studies it is found that the tenant's income is in almost direct proportion to the capital he has invested. This is most encouraging, in that a tenant can rise to the position of a farm owner by using his accumulating savings to operate larger farms until he has sufficient funds with which to buy.

A tenant's labor income is influenced by the kind of lease he has. Under normal conditions, those tenants who rent on a cash basis receive better incomes than those renting on a share basis. Under this system, however, the landlord gives less supervision and expects a lower rate of income on his investment. The tenant takes more chances, and in good years has possibilities of an excellent income, while in poor years he may lose everything.

In Table IV is given the distribution of the tenants' income for 588 farms in six states. It is noted that 5.6 per cent of them make over $2000 as a labor income. One-fourth of them, or 25 per cent, make between $100 and $400. Practically none is making a minus labor income.

TABLE IV. DISTRIBUTION OF LABOR INCOMES, 588 FARMS OPERATED BY TENANTS

States	Number of Farmers	Number making Minus Labor Incomes	Number making Incomes between $1 and $400	Number making Incomes over $2000
Indiana	83	0	26	3
Illinois	71	0	11	9
Iowa	93	3	28	5
Michigan	153	3	41	1
Pennsylvania	124	2	31	6
Oregon	64	1	10	9
Total	588	9	147	33
Per cent of total		1.5	25	5.6

PROFITS THAT LANDLORDS RECEIVE

In Table V is given the capital, receipts, expenses and net income for the landlords of the 722 tenant farms given in Table III. On the whole, the net returns on investment are low, considering the time and supervision needed. On the other hand, the rise in land values within the last twelve years has given the owners a very substantial profit in itself. In regions where land values are stationary, we would not expect landlords to be satisfied with an average income of 4 per cent.

TABLE V. THE AVERAGE CAPITAL, RECEIPTS, EXPENSES AND INCOME OF THE LANDLORDS OF 723 FARMS OPERATED BY TENANTS

State	County	Year	Number of Farmers	Average Capital	Total Receipts	Total Expenses	Farm Income	Per Cent on Investment
Indiana	Clinton, Tipton	1910	83	18,423	1002	351	651	3.53
Illinois	Cass, Menard	1910	71	36,479	1538	213	1325	3.64
Iowa	Greene, Guthrie	1910	93	20,728	1014	354	660	3.19
Michigan	Lenawee	1911	153	12,218	856	231	625	5.11
Pennsylvania	Chester	1911	124	9,785	1063	349	714	7.30
Oregon	Marion, Polk	1911	64	24,090	873	259	614	2.6
New York[1]	Tompkins	1907	135	5,242	573	138	435	8.3
Average for 723 farms				18,138	989	271	718	4.0

From a careful study of all available data, we are led to believe that the farmer is receiving only nominal wages and interest on his capital. In certain years he makes good profits, but adverse weather conditions or low prices in one year will often wipe out the returns of a period of years. Again, the agricultural districts which have been studied are much above the average of the general country, so that the income of the ordinary farmer in all

[1] Bulletin 295, Cornell University.

probability would be less than that indicated by the data given in the foregoing tables.

The only available data on this point, and which lead us to the same conclusion, are the paper by Professor W. J. Spillman on "The Farmer's Income," issued in Circular 132 of the Bureau of Plant Industry, of the United States Department of Agriculture.

These same farm-management studies clearly demonstrate a wide difference in the efficiency of farm organization. Certain principles, such as the organization of the farm enterprises to secure the maximum use of labor and uniform good quality of business, are of the utmost importance. Untold possibilities are within the reach of the ordinary farmer through more efficient organization of his entire farm business without any increase in capital or labor. It is in this direction that the farmer can increase his profits, without raising the price of products sold.

VI. AGRARIAN MOVEMENTS IN THE UNITED STATES

THE RISE OF THE GRANGER MOVEMENT

By Charles W. Pierson

(From the *Popular Science Monthly*, December, 1887. Reprinted by permission of D. Appleton and Company)

SOME wise men of the press are saying that the Knights of Labor are like the Grangers. As the exact points of resemblance are not stated, the assertion serves merely to call up a recollection of the unique secret society, which, a dozen years ago, seemed far more powerful than ever the Knights of Labor were. The Grange still lives, but its glory is departed, and its history is recorded only in the distorted statements of partisans and of misinformed review-writers.

In the latter part of 1868 certain Minnesota farmers received a printed sheet which began as follows:

> In response to numerous inquiries in regard to our order, this circular is issued. The order was organized by a number of distinguished agriculturists of various states of the Union at Washington in December, 1867, and since then has met with most encouraging success, giving assurances that it will soon become one of the most useful and powerful organizations in the United States. Its grand object is not only general improvement in husbandry, but to increase the general happiness, wealth, and prosperity of the country.

As an aid in accomplishing its author's design, this circular was certainly a success. As a statement of truth it was a conspicuous failure. Instead of having "met with most encouraging success," the order had scarcely been heard of; while the "distinguished agriculturists" who had "organized" it comprised one fruit-grower and six government clerks, equally distributed among the Post-Office, Treasury, and Agricultural departments. Of these seven

Immortal Founders, as enthusiastic Grangers were calling them a few years later, six are living. Nevertheless, it is difficult to determine just how much of the plan and its execution was due to each. The truth seems to be about as follows: In 1866 one O. H. Kelley, a clerk in the Agricultural Department, was sent by the Commissioner of Agriculture on a tour of inspection through the Southern States. Impressed with the demoralization of the farming population, he hit upon the idea of organization for social and educational purposes, as a means for these people to better their condition. An ardent Mason, he naturally thought of an organization similar to the Masonic, in whose ritual, secrecy, and fraternity he saw the secret of that permanence which all agricultural societies had failed to attain. A niece in Boston, to whom he first mentioned the idea, recommended that women be given membership, thus originating an important feature. On returning to Washington, Kelley took the other six immortals into his confidence, and the seven set about developing the plan and constructing a ritual. It would be a long story to tell how, by two years' labor in the intervals of their regular work, they constructed a constitution providing for a national, state, county, and district organization, and a ritual with seven degrees; how the names — Patrons of Husbandry for the body in general and Grangers for the subordinate chapters — were finally hit upon, the latter being taken, not on account of its etymological meaning (Latin *granum*), but from the name of a recent novel. Suffice it to say that on December 4, 1867, a day still celebrated as the birthday of the order, the seven assembled, and, with an assurance almost sublime, solemnly organized themselves as the "National Grange of the Patrons of Husbandry." There was none to dispute the title, and they enjoyed it alone for the next five years. It is hard to tell just what were the expectations of these men. Kelley has been called everything from an unselfish philanthropist to a scheming adventurer. One can not but admire the pluck with which he persevered through great discouragements, and the unselfish spirit in which he and his fellow-workers surrendered control of the movement when it had become a power in the land. Their first step was to organize a mock Grange among

their fellow-clerks and their wives, to experiment with the ritual. The experiment proving satisfactory, Kelley resigned his clerkship and started out to proclaim the Grange to the world, armed only with a few dollars and a sort of introductory letter from the other six to mankind at large.

He was not a success as a lecturer. Moreover, he made the mistake of laboring in the larger towns, instead of in the country. The four or five Granges that he coaxed into life at once proceeded to die, and he finally reached Minnesota penniless, but not discouraged. Even while the six at Washington were becoming faint-hearted, and writing to him that the landlady was pressing them grievously for hall-rent, and that it would be wise to give up the whole business, he could issue the circular with which I began, dilating upon the success of the order and the distinguished agriculturists at Washington who founded it. At his home, near Itasca, he worked on furiously, now dodging a creditor, again obliged to postpone answering letters for want of means to buy postage-stamps, till finally signs of success began to appear. He had organized a few Granges in Minnesota, and was able to detect a growing interest in other states. The prime necessity now was to encourage this feeble beginning, and by all means to keep it under the delusion that it was part of a powerful national organization. To this end every cent that could be earned or borrowed was used in distributing photographs of the founders, along with a mass of circulars and documents purporting to come from the national office at Washington. Every important question was ostensibly referred by Kelley to the executive committee at the same place, and the decisions and power of this mythical body were held in great awe by the patrons. But other men were becoming interested and going to work. In Minnesota they were able to organize a State Grange, having mustered the fifteen district Granges required by the constitution. Two years later the State Grange of Iowa was organized, and its Worthy Master crossed the country to attend what the founders were pleased to call the "Fiftieth Annual Session of the National Grange." He was the first member of the order to meet with the seven. What he thought on ascertaining the real state of

things is not recorded. However, he did not give up the work, and later he became Worthy Master of the National Grange. The order kept growing. At the sixth annual session, held at Georgetown in January, 1873, there were delegates from eleven states, and four women were present; 1074 Granges had been organized during the year. The founders now gave up their offices, not even reserving the right to vote, and delivered over the results of six years' labor to their successors. For the first time, the greatest of farmers' societies was in the hands of farmers!

The next two years were years of astounding growth — a growth almost unparalleled in the history of secret organizations, and resembling that of the Know-Nothings twenty years before. At the end of 1872 about 1300 Granges had been organized. In the year 1873, 8668 more were added; and in 1874, 11,941, making a total of almost 22,000, with an average membership of 40. Some idea of the magnitude of these figures may be gained from the fact that the whole number of lodges of Masons and Odd Fellows in the world is estimated at about 20,000, with an average membership of 40. The Order was represented in every state except Rhode Island (which has never found room for it). It had been established in the Indian Territory, whence it appealed for help to the National Grange because the governor of the Chickasaw nation looked on it with suspicion, and had ordered all Grangers out of the Chickasaw country. It had taken root in Canada, where, a few years later, there were 860 subordinate Granges. One deputy introduced it into England; others were laboring in France and Germany; and inquiries and invitations were coming even from Australia and Tasmania.

Grange treasuries were overflowing. In 1873 and 1874 the dues to the National Grange alone, according to the official statement, amounted to $348,532.20. The press was discussing the new order with alarm. Legislative committees were scurrying about the country to see what could be done for the farmer. In the words of the New York *Nation*, "the farmer was the spoiled child of our politics." The House of Representatives at Washington was overawed at the new power that was apparently rising in politics, and those who claimed, for the most part falsely, to

represent the movement enjoyed an astonishing influence. Among other legislation secured by these men, one bill was rushed through for printing and distributing to the farmers certain agricultural documents, at an expense of $500,000! W. W. Phelps opposed it, only to be bitterly attacked on the score of sympathy with monopolists and lack of sympathy with farmers. One fervid orator from Kansas went over his whole record for proofs of this, and alleged many damaging facts — among them that he was rich, that he was interested in banks and railroads, and that he had been graduated with honor from Yale College. "These Grangers," exclaimed the orator, "mean business; . . . they are chosen to be the sovereigns of the mightiest republic of earth." Various cities strove for the honor of having the National Grange offices located within their limits, one offering to give a splendid building, another, to furnish necessary office-room and an annuity of $5000 for five years, but the Grange was rich and independent in those days. At the seventh annual session held at St. Louis in 1874, a declaration of purposes was adopted which still remains the official statement. I can quote but fragments of this creditable document:

> We shall endeavor . . . to enhance the comforts and attractions of our homes, and strengthen our attachment to our pursuits; to foster co-operation; . . . to diversify our crops; to condense the weight of our exports, selling less in the bushel and more on hoof and in fleece; to discountenance the credit system, the mortgage system, the fashion system, and every other system tending to prodigality and bankruptcy. We propose meeting together, buying together, selling together. We wage no aggressive warfare against any other interests whatever; . . . we hold that transportation companies are necessary to our success, that their interests are intimately connected with our interests, and that harmonious action is mutually advantageous. We are not enemies of railroads. In our noble order there is no communism, no agrarianism, we emphatically assert the truth taught in our organic law that the Grange is not a political or party organization. No Grange, if true to its obligations, can discuss political or religious questions, nor call political conventions, nor nominate candidates, nor even discuss their merits in its meetings.

It is to be noted that this is 1874, at the height of the "Anti-Railroad" and "Farmers' party" excitement.

The Grange had now reached the zenith of its power. One year later, in the stormy meeting held at Charleston, a measure

was passed for the distribution of the surplus revenue of the National Grange, which may be said to mark the beginning of Grange decadence. But a consideration of this decadence may well be postponed for a time.

Any discussion of the causes of the Grange's astonishing growth has been deferred to this point, in order that they may be considered in connection with the railroad legislation of the early seventies, with which the Grange, to most minds, is so entangled. The spirit of enterprise following the war found vent in developing the resources of the upper Mississippi Valley. Emigration from Europe thither increased greatly after the close of hostilities, and the tide was swelled by men turned adrift in the disbanding of the armies. The cry was for railroads to open the country, and the speculative spirit, induced by an inflated currency, was quick to second it. Land-grants of enormous extent were made by the general and state governments, and Western municipalities vied with each other in bonding themselves to offer inducements to railroad-building. In the years 1865–1871, $500,000,000 was invested in Western railroads. D. C. Cloud, in his "Monopolies and the People," makes the statement that "one acre out of every eight and a half of the entire area of Iowa has been given away to railroad corporations. . . . There were land grants, subsidies, bonds, subscriptions, and taxes to the amount of five per cent of our entire valuation in one year." Every farmer wanted a railroad, and every one with any pretense to economic knowledge wanted two, to keep down charges by competition! Railroads and population reacted on each other. The consequence was, that both railroads and population moved too far west, accumulating debt in the inflated currency as they went. There was little traffic for the railroads in anything but grain. So long as the price of this was high, all went well, and they were suffered to go on their reckless way with little remark save a clamor for more competing roads where the pinch of discrimination was felt. But conditions changed. The price of wheat began to show the effect of the enormous increase of production. The demand caused by the Prusso-Austrian and Franco-German wars ceased. The grasshopper became a burden. The

farmers, who had gone into debt in flush times, felt the pinch of an appreciating currency. A villainous tariff, increasing the cost of transportation and of everything they bought, conspired with the rest to produce unavoidable distress. Add to all this the crisis of 1873, and it is not strange that there was a "Farmers' Movement." "Organize!" was the universal cry, and there were as many reasons for it, in the farmer's mind, as he had needs and grievances, fancied or real, and these were legion. Owing to the change in economic conditions, wheat could no longer pay transportation charges and be profitable. According to the report of the Senate Committee on Transportation to the Seaboard, the average price of wheat in Chicago fell thirty-three cents from 1868 to 1872, while the charge for transportation to the East fell but nine cents. The farmer was forced to feed his grain to his cattle or use it for fuel. In this state of things the railroad loomed up before him as the only obstacle between himself and his hungry Eastern brother, whose needs he was anxious to supply for a fair compensation. A toll for transportation exceeding the price he received seemed *a priori* a monstrous extortion. To aggravate matters, the railroads were run with unparalleled short-sightedness. The term "railroad official" was a synonym for insolence. There had been great corruption in the building of many of the roads, and such imperfectly comprehended terms as "Credit Mobilier," "watered stock," and "Wall Street speculation," were in everybody's mouth. Most of the stock was owned in the East and in Europe, and the expression "absentee ownership" began to arouse somewhat the same feeling as in Ireland. The *Nation* pleaded for the widows and orphans who were kept from want only by their railroad-stock, but the farmer replied that the stock was in the hands of such orphans as Commodore Vanderbilt and Jay Gould, who could look out for themselves. Add the fact that the railroads felt the hard times as much as the farmers; that for very self-preservation the traffic at competing points was so furiously fought for as to make rates ruinously low, while each road extorted all it could squeeze where there was no competition, and it will not seem strange that the "Farmers' Movement" developed, on one side, into a political organization

to fight railroads. But this was not the Grange. A misconception exists on this point. In everything published on the subject, the anti-railroad movement is called the Granger movement; the resulting legislation, the Granger legislation; the cases that arose, the Granger cases. It must be granted that the same farmers often were engaged in both movements, and that certain subordinate parts of the Grange did sometimes disobey their organic law so far as to engage as bodies in the agitation, chiefly by memorializing legislatures. It was impossible to control completely the rank and file of such a vast order. But, with these reservations, the Grange, as an organization, took no part in the anti-railroad agitation. The two were not cause and effect, but parallel effects of the same general causes. In the way of proof the "Declaration of Purposes" of 1874 has already been quoted, to the effect that the Grange is not hostile to railroads, and that all political action and discussion is totally excluded. The published proceedings of the National Grange show the same thing. In 1874 the executive committee reported: "Unfortunately for the Order, the impression prevails to some extent that its chief mission is to fight railroads." In 1875 a resolution from Texas favoring railroad legislation was suppressed. In 1873 the Master of the Minnesota State Grange, being informed that certain Granges in his jurisdiction had appointed delegates to a state anti-railroad convention, ordered the offending Granges to recall their delegates. Congressman D. W. Aiken, of South Carolina, long a member of the National Executive Committee, said in an address four years ago:

> Frequently had the Grange to bear the odium of other men's sins. . . . For instance, there existed in Illinois and Wisconsin, and other sections of the Northwest, agricultural clubs whose province seemed to be to wage war against transportation companies. Anathemas were hurled upon the Grange for making this attack, whereas every Patron of Husbandry knew that the Grange as such was not a participant in the fight from beginning to end.

It may seem surprising that such an error should have arisen, but it is not inexplicable. The newspapers first applied the name "Grangers" to Western farmers in general, and consequently to

those fighting railroads. From this it was an easy step to the assertion that the Grange was the fighting organization. There were some exceptions. The *Tribune* sent a special correspondent West, and afterward published a "Farmers' Extra," in which it is expressly recognized that the Grange is not fighting railroads, though some Grangers are. The *Times* published the same discovery with the comment that the general impression on this point was a mistaken one. But the *Nation*, which talked loudest of all, and the press in general, made no such distinction. It is not strange that Mr. C. F. Adams and other writers on railroads have followed this leading, as it was of no consequence to them whether the Western agitators were known as "Grangers" or by any other name. The principal difficulty is with those who wrote from the farmers' standpoint. It can only be said that they wrote before the railroad legislation had been given a fair trial, and that they wanted to claim for the order the credit of what looked like a success. Their books, in general, are of a hortatory and prophetic rather than historical character.

From this point of view it may seem foreign to our subject to discuss the railroad agitation further. Its intimate connection with the Granger movement, however, and the casual relation between the two in the public mind, may furnish excuse. In 1867, when the Grange was founded at Washington, most of the Western states were still passing laws to facilitate municipal and other aid to railroads. A few, however, were beginning to take the alarm, and about 1867 six made feeble attempts to check the growing abuses; from Iowa, which merely affirmed the full liability of the railroads as common carriers, to Ohio, where a "commissioner of railroads and telegraph" was provided for. The feeling grew during the next three years. Illinois, for example, passed an act in 1869 providing that "all railroad corporations shall be limited to a just, reasonable, and uniform toll." These facts are mentioned to show not tangible results, for they were not attained, but the growth of public feeling prior to the adoption of the new state constitution by Illinois in 1870, which, with the bills immediately following, first awakened the country at large to the fact that something was brewing among the

Western farmers. The constitution of 1870 declares: "Railroads . . . are hereby declared public highways, and the General Assembly shall . . . pass laws establishing reasonable maximum rates. . . . No municipality shall ever become subscriber to the capital stock of any railroad." The attack was followed up in 1871 by an act establishing a system of maxima, and providing for a board of commissioners to put to each company forty-one specified questions and as many more as their ingenuity might devise. The railroads, relying on the Dartmouth College case, declared the law unconstitutional and refused to obey it. In the suits that arose, Judge Lawrence, of the state supreme court, pronounced the fixing of maxima by statute unconstitutional with reference to the new state constitution, expressing no opinion on the point claimed by the railroads — that this constitution itself was contrary to the clause in the United States Constitution in regard to impairing the obligation of contracts. Coming up for re-election, Judge Lawrence was defeated, to the astonishment of himself and everybody else, by a combination of farmers. Emboldened by success, the farmers held nominating conventions, and managed to elect several circuit judges, and county tickets in nearly half the counties. A great mass-meeting was held at Springfield during the session of the legislature in that city, to urge upon it the necessity of a new railroad bill. The legislature, nothing loath, passed the law of 1873, avoiding the point made by Lawrence against that of 1871 by providing for "reasonable" instead of "maximum" rates, and making it the duty of the commissioners to draw up a schedule of such rates. Provision was made that they be ideally unfit for the task in the following section: "No person shall be appointed who is in any way connected with any railroad company, or who is, directly or indirectly, interested in any stock or bond." It is no wonder that their schedule was as fearfully and wonderfully made as a United States tariff list. The *Nation* called it "a crazy table of rates drawn up by a mob of ignorant and excited politicians." The system had one advantage, however, over a cast-iron set of maxima fixed by statute. It could be modified or made inoperative as the information of the commissioners grew, and this is

what was done in Illinois. Early in 1873 the "American Cheap Transportation Company" was organized at the Astor House, and later in the year two other great mass-meetings were held in Illinois. They accomplished only a great waste of pyrotechnic eloquence. Demagogues and sharpers had taken control, and the real movers had quietly dropped out.

In spite of the assertions of Mr. C. F. Adams and others, it can be shown that the Grange was not responsible for the Illinois legislation. When the constitution of 1870 and the law of 1871 were passed, the Grange had scarcely a foothold in the State. The State Grange was organized in March, 1872. The real organ of agitation was the "State Farmers' Association," whose subordinate lodges were called "Farmers' Clubs." Its president, W. C. Flagg, testified before the Windom committee in 1873 that he was not a Granger, that his organization was an open and political one, while the Grange was secret and non-political, disavowing and preventing, as far as it could, any political action. By 1874 seven states had passed so-called "Granger" laws, either fixing maxima or providing for a commission to make out a schedule of rates. The Iowa bill, on the former model, devoted twenty-six pages to a classification of freight. But all this was surpassed in Wisconsin. In 1873 there appeared in the state senate a certain Potter, from Wautoma, Waushara County. It was said that his county did not contain a mile of railroad, and he probably knew as little about railroads as any other man in the legislature; at least, to believe the contrary would require a very pessimistic view of Wisconsin intelligence. March 11, 1874, the famous "Potter Bill" became a law. Mr. Potter is said to have made it up by calling for suggestions and incorporating those most disadvantageous to the railroads. At any rate, it was bad enough at first, and the railroad interest worked to increase its enormities, hoping to get it into a shape that they could defeat. They were mistaken. The bill passed, and the governor celebrated some speedy victories in the courts by firing cannon.

Meanwhile cases were before the Supreme Court on the validity of all this legislation. The court recognized the gravity of the

question and reserved its decision, affirming the constitutionality of the laws, for more than a year after the test case (*Munn* v. *Illinois*) was argued. The gist of the decision is in the following words:

> When one devotes his property to a use in which the public has an interest, he, in effect, grants the public an interest in that use, and must submit to be controlled by the public for the common good to the extent of the interest he has thus created.

The decisions in this, and the six other "Granger" cases, were pronounced by Chief-Justice Waite, Justices Field and Strong dissenting.

In the courts the farmers were victorious. But, unfortunately, the Supreme Court does not pass upon economic laws, and to these the movement had already succumbed. By the time the cases were decided, in 1876–1877, scarcely one of the statutes in question remained in force. In the second year under the Potter law, no Wisconsin road paid a dividend, and only four paid interest on their bonds. Foreign capitalists refused to invest further in the state. On the recommendation of the governor, the very men who had passed the law hurriedly repealed it. In the next year Mr. Potter faded out of American politics, and his place in the Senate was filled by another. Most of the other states also beat a precipitate retreat, poorly covered by a faint demonstration against unreasonableness in general.

So the victors were beaten, and bad times made the defeat seem worse than it was. But they claim, and not without reason, to have done lasting good. The attitude of railroad corporations is very different from what it was twelve years ago. More of the old grievances have disappeared than is generally supposed. To this movement we owe the railroad commissions found in so many states. How much they are worth is, of course, a matter for dispute. The power of the railroads to reward or punish is so real and present, while that of the people at large is so indefinite and far away, that it is not strange if the ordinary commissioner inspires about the same terror as does the gingerbread lion. Of late the Grange, forgetting its record, has been claiming the credit for all the good accomplished. It is gravely

asserted that a resolution of the National Grange in 1874 caused the appointment of the Windom Committee on Transportation in 1872; in New York, Grangers boast of the Hepburn Commission of 1879, and claim to have defeated a railroad man, C. M. Depew, for the Senate in 1881. And doubtless the Interstate Commerce Bill will be hailed as one more achievement.

THE OUTCOME OF THE GRANGER MOVEMENT

By Charles W. Pierson

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THE founders of the Grange thought they were establishing an Order whose aims were to be social and educational. But these were soon overshadowed by the co-operative, anti-middleman feature. This drew more into the Order than all other considerations combined, at one time almost threatening to transform our farming population into a race of traders, and this was likewise the chief cause of Grange decay. Fighting middlemen, unlike fighting railroads, was a legitimate kind of activity, as it had nothing to do with politics or theology — the two subjects tabooed by Granger law. Unfortunately, the story of Granger co-operation is recorded nowhere and thoroughly known to nobody. Those who know most preserve a discreet silence, mindful of questionable transactions and failures, now generally forgotten.

No sooner had Kelley established a few Grangers in Minnesota in 1869 than they set up a clamor for leasing flouring-mills and appointing agents in St. Paul and New York, in order to mill and ship their own grain. However farcical might be the position of the founders at Washington, they at least were conservative enough to disavow this action. But upon Minnesota's threat to secede they yielded, and an agent was appointed in St. Paul. His first commission chanced to be to buy a jackass for a patron, whereupon one of the founders made comment: "This purchasing business commenced with buying asses; the prospects are that many will be sold." As soon as the National Grange fell into the hands of farmers, there was a movement to make it the head of a gigantic co-operative scheme. It was proposed to have three national purchasing-agents, stationed at New

York, Chicago, and New Orleans, to buy for the patrons of the whole country. But this was soon seen to be impracticable, owing to the diversity of interests in the Order. The same was true with regard to the purchase of patent-rights. With the view of absorbing into the Order the profits of manufacturing farming-implements, the National Grange had bought the right to manufacture a harvester, a mower and reaper, and various other machines. It had also tried to buy the copyright of Cushing's "Manual" — a book in great demand among the Grangers. Meanwhile, the executive committee was busy in another direction. Congressman Aiken of South Carolina, one of its members, says that they "visited the manufacturers who supplied the market with such implements as the farmers needed, from a scooter-plow to a parlor-organ, proposing to concentrate the purchases of the Order where the greatest discounts were obtained for cash. In no instance did they fail to secure a reduction of 25 to 50 per cent." Mr. Aiken notes the astonishment of one cutlery-maker at a single order for ten thousand pruning-knives of a particular pattern. Such enormous reductions from regular prices were obtained only under a pledge of secrecy. But as information had to be distributed by thousands of printed sheets, the patrons could not keep the secret. The contracts leaked out, causing the withdrawal of many firms from their agreements. What experiments the National Grange might have tried with the great sums in its treasury can only be conjectured, as its resources and influence over the subordinate lodges were crippled almost fatally in the Charleston meeting in 1875. It probably would have continued the crop reports, which, though costly, and often unreliable through the ignorance and carelessness of Granges about furnishing statistics, had proved valuable. Like the State Granges, which had full treasuries, it might have squandered its capital and come to grief on co-operative ventures. Such is the inference to be drawn from utterances like the following, from the executive committee:

To secure rights to manufacture leading implements . . . is pre-eminently a duty of the National Grange, and a measure of the greatest importance, directly, because the profits of manufacture will thus be controlled by the Order,

as well as the profits of transfer or dealing; indirectly, by securing facilities that will favor the introduction of manufacturing establishments in districts at present far removed from them, and where their products are in demand.

The plan of having the farmer's machinery manufactured at his door and under his supervision was much better as a statement of protectionist doctrine than as a guide to safe investment. The policy of the meeting of 1875 indicated that, before it was too late, the National Grange recognized that there was danger of going too fast, and that its province was rather to devise plans for the use of the Order than to plunge into enterprises itself. It therefore sounded a note of caution, and first issuing a scheme for co-operative joint-stock stores based on something found in this country, proceeded to work out a more elaborate system on the model of the Rochdale Pioneers. Various English publications on co-operation were distributed among the Order, and an envoy was sent to England to confer with English co-operators. The result was a new set of rules, closely following the Rochdale plan, and insisting on the feature of investing the profits of trade for the stockholders on the basis of purchases, as opposed to the simple joint-stock arrangement of the earlier scheme, which had been largely put into practice. After a prolonged stay, the commissioner to England made his report, bringing from English co-operators proposals for dealings on a grand scale. The Grange was to subscribe $125,000 toward the necessary shipping depots, and all trade was to be carried on directly with England through a company to be known as the "Anglo-American Co-operative Company." The Englishmen followed the matter up by sending three men to the United States to confer with the executive committee. After looking over the ground, they proposed to erect their own warehouses at four seaboard cities, prepared to supply every article of clothing and every farm-implement needed by patrons at a discount of 10 per cent, and to receive in exchange every variety of farm-produce at the market price, provided that the Grange would concentrate its purchases upon them. But by this time the ardor of the patrons had been cooled by reverses in local experiments, and the executive committee was unable to make the necessary guarantees. The

National Grange's efforts now subsided into protests and warnings against the commission and joint-stock ventures so common in the Order, and pleas for the Rochdale system. Many enterprises were undertaken upon this basis, proving, if not highly profitable, at least not disastrous. Some are still in existence, notably the "Texas Co-operative Association." But, in general, the warning came too late. The patrons had been too impatient to grasp the anticipated gains, and had burned their fingers.

The step from co-operation in the National, to co-operation in the State and district Granges, is one from theory tinged by practice, to practice pure and simple. The craze for co-operation was like that for gold in 1848. The first and simplest step was to appoint a profusion of buying and selling agents, usually on salaries from the State Granges. But a few losses by mismanagement and rascality were enough to deter the farmers from trusting their produce to selling-agents. The system of agencies for buying only was not open to the same risks, but its utility differed in different states. For Iowa, where every farmer raised grain and wanted plows and reapers, an agent could buy to great advantage. The patrons there gave figures to show that they saved $50,000 in one year on plows and cultivators alone. In the same year they bought fifteen hundred sewing-machines at a reduction of 45 per cent from retail prices. Local dealers were driven out of business. In New York, on the other hand, where the farmers are dairymen, grain-growers, nurserymen, and hop-growers, a state buying-agency was found useless, and was abandoned, after some hard experience, for a system of district agencies. These have effected saving in some instances, in others proved unprofitable, partly owing to the outcroppings of mean human nature among those most clamorous for the benefits. The "State Women's Dress Agency," in New York City, lasted longer, but, strangely enough, the patronesses preferred to buy their own dresses, and it finally expired. The states did not stop with agencies. They too began to buy patent-rights. There was an idea that all the principal machinery used by the Order should be manufactured within it. Flouring-mills, elevators, tobacco and grain warehouses, were established. Some ventures were unsuccessful from the start,

and at once clamored for subsidies. Others boasted of the greatest prosperity, one making a dividend of 50 per cent the first year. In 1874 two thirds of the elevators in Iowa were in Grange hands. The experiment of shipping provisions directly to Southern Grange centers was undertaken. In 1876 the patrons were said to own 5 steamboat or packet lines, 32 grain-elevators, and 22 warehouses. Some of these were local ventures, but the full treasuries of the State Granges furnished the capital for most of them. It is always easy to experiment with other men's money, and the State Grange officials found no difficulty in getting, with the Grange funds, into enterprises where disaster was inevitable. It came in every instance. The blow was so overwhelming in some states (Arkansas and Nebraska, for example) that they dropped at once from the order. District Granges disbanded for fear of being held individually liable for State Grange debts, and the very name Granger became a reproach. In other states the Grange was greatly weakened, but survived. In Iowa a few hundred of the faithful have struggled on for years, the officers receiving no salaries but devoting all receipts to the debt left as a reminder of past glories. Professor R. T. Ely, in his recent book on "The Labor Movement in America," expatiates on the "grand results" achieved by the patrons in co-operation, and credits the absurd statement that Grange savings in this way amounted to $12,000,000 in one year! Unfortunately, the greater number of enterprises were "grand" chiefly in failure, a fact of which Professor Ely seems never to have heard. About all that survived the wreck of the later seventies were mutual-insurance companies, principally fire-insurance, and co-operative stores. At present, Grange insurance companies are reported from more than half the states and from Canada, and Grange co-operative stores are even more widespread. Successful buying-agencies still exist in five states, and the Delaware patrons have a fruit-exchange. The most interesting state of things is found in Texas, where there are about one hundred and twenty-five Grange stores established on the modification of the Rochdale rules, and banded together in a state association. This holds

annual meetings, contributes $2000 to keep Grange lecturers in the field, and reports steady prosperity.

Much of the later history of the Grange has been anticipated in treating of railroad legislation and co-operation, but its decadence merits a little closer attention. Only those interested in agricultural pursuits were eligible for membership, but, in the unprecedented growth of the order under the labors of twelve hundred deputies, it was impossible to keep out men who were farmers only to the extent of a garden or back yard. In those days lawyers, doctors, merchants, discovered in themselves a marvelous interest in agricultural pursuits, and joined the Grange. As a Granger remarked, they were interested in agriculture as the hawk is interested in the sparrow. Two Granges were organized in New York City; one, the "Manhattan," on Broadway, with a membership of forty-five wholesale dealers, sewing-machine manufacturers, etc., representing a capital of as many millions; the other, the "Knickerbocker," one of whose first official acts was to present the National Grange with a handsome copy of the Scriptures — a gift causing some embarrassment. A similar one was organized in Boston, which made great trouble before it could be expelled; and one was found in Jersey City, with a general of the army as its master, a stone-mason as secretary, and the owner of a grain-elevator as chaplain. But discordant elements were not all from other professions. Thousands of farmers had been carried in by the enthusiasm of the movement, with no idea of the nature and aims of the Order. Some expected to make a political party; others, to smash the railroads; almost all hoped to find in co-operation a panacea for poverty. There was great lack of discipline, but no discipline could have harmonized such a body. The first outbreak was in the direction of democracy. Lay members were eligible to but four of the seven degrees, and this was denounced as aristocratic, opposed to the spirit of democratic institutions. Along with this came the cry that the National Grange was growing too rich. In vain it made liberal donations of seeds and provisions to sufferers by grasshoppers and floods, and spent large sums in distributing crop-reports among the Order. The clamor

continued till the faint-hearted in the Charleston session in 1875 carried a measure to distribute $55,000 to the subordinate Granges — about $2.50 to each! Prominent Grangers have maintained that the causes of Grange decay are to be found in this and the other measures of the same session curtailing the power of the National Grange. The true cause has been seen to lie deeper, in the failure of business enterprises. These measures had some influence, however. They were the beginnings of endless tinkering with the constitution, and the cause of quarrels innumerable. Among other quarrels was one with the Grange of Canada over the question of jurisdiction. Soon afterward came the first open break in the ranks. An Illinois Grange voted to disband, alleging pecuniary reasons and the autocratic rule of the National Grange. Many still had dreams that the Order was to spread over the world, but the co-operative leaven had begun to work, and there was soon no mistaking the tendency to decay. At the annual meeting in 1876, four thousand Granges were reported delinquent. Salaries were at once reduced — the Master's from $2000 to $1200, and the secretary's from $2500 to $2000. It was vainly attempted to stem the tide by issuing an official organ, the *Grange Record*. In 1879 the Master's salary was dropped entirely, and the secretary's reduced to $600. A bill for services from Herr Prenzel, who had been working for the Order in Germany since 1875, was dismissed with little ceremony. The National Grange was not poor, having always kept about $50,000 to its credit invested in government bonds, but it had given up the idea of converting the world. But the low-water mark had been reached. Cash receipts in 1880 increased 200 per cent over those in 1879. More Granges had been organized than in any year since 1874. The growth was especially marked in New England. The State Grange of Connecticut was revived after a dormancy of six years, and Maine began to claim more Grangers in proportion to population than any other state. At the session of the National Grange for 1885, held in Boston, delegates were present from all the states and territories but eight. It is not easy to explain this growth, as there seems to be no great principle underlying it. Some New England patrons are agitating

free trade, but that can not be called a Grange issue, as Pennsylvania patrons want protection extended to farm-products. The harmless practice of holding great fairs is gaining ground. At a recent one in Pennsylvania, lasting a week, the local paper says: "Over fifty thousand people were present on one day, and the sale of machinery direct to the farmers ran up into the hundreds of thousands of dollars. Never were manufacturers and consumers brought into more direct and friendly relations." This is, perhaps, the latest development of Grange anti-middleman ideas.

The most enthusiastic Grangers at present are the farmers' wives and daughters, who are attracted by the social opportunities. In fact, the Order seems to be going back to the educational and social basis of the founders, and its boasts are no longer co-operative ventures so much as Grange buildings and libraries and the Grange schools that exist in several states. In these directions, and in what it has done to heal sectional differences between North and South, the Grange can boast its best achievements.

THE POPULIST MOVEMENT

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I

THE PLATFORM HISTORY OF THE PEOPLE'S PARTY

THE last five years have been remarkable for the rapid rise of the political party now known as the People's Party. It has extended from one state into another until there is an organization in every state, not to mention the territories. Although including a part of the discontented of the towns and cities, it can best be defined as a class movement chiefly confined, so far as membership is concerned, to men engaged in agriculture. The complaint of the party has been that prices of farm products are low, that the farmers' revenue is much less than formerly, and that monopolies are crushing the small producer and taxing the consumer. The first two are declared to be the result of financial, the last of industrial, legislation.

The object of the party is to secure relief for the farming and laboring classes. The justification of this object is found in the decline in prices and the heavy burden of debts, made doubly so by the change in money standards. Legislation is looked upon as the means to secure an improved condition; hence the formation of a political party. The government is thus the all-powerful lever by which better times are to be brought about.

This third party, however, was not the growth of a day. Its formation was due to changes in modes of agriculture and manufacturing introduced soon after the Civil War. Machinery had a

potent effect upon agriculture, and the products of the farm were rapidly increased. A decline in prices followed, which has continued almost uninterruptedly ever since, resulting in the early formation of agricultural organizations in an effort to stay the decline. The Grange of 1867, the Farmers' Alliance of 1879, the Agricultural Wheel, 1878, and others were the forerunners of this organized movement. Efforts were made from time to time to join all societies of this kind into one great combination for political purposes. Although many members of the societies had been disturbed by the third-party idea, it was not until 1890 that any great progress was made in the matter. In this year began a series of conventions which finally resulted in the formation of the party under consideration.

There are five of these conventions whose proceedings interest the student of the People's Party. Two of them were not Populist assemblies but the meetings of organized societies showing symptoms of the third-party fever. They were held previous to the real beginning of the party, but belong nevertheless to the series of conventions which have given us so many new ideas as to the way in which we should be governed. The first one in which the idea of a third party appeared was held in St. Louis, December 6, 1889. It consisted of delegates from the farmer's organization and from the Knights of Labor. The object of the meeting was to effect a union between the two classes, which was accomplished under the name of the Farmers' Alliance and Industrial Union. Although this organization wisely deferred its entrance into politics as a party, it nevertheless passed some resolutions concerning the free coinage of silver, abolition of national banks, sub-treasuries, plenty of paper money, government ownership of railroads, non-ownership of land by foreigners, prohibition of futures in grain, and the reduction of the nation's income to expenses. Notice, then, that all these measures are economic, none of them even remotely verging upon politics. On December 7 of the following year (1890) another convention was held at Ocala, Florida. The composition of this assembly was somewhat different from that of the preceding one. Members of the Southern Alliance, the Farmers' Mutual Benefit

Association, and the Colored Alliance were present. Here again the third-party idea remained unpronounced. The platform issued at Ocala differed in very few respects from that of 1889. The sub-treasury scheme was not endorsed as in the year before, and the government ownership of railroads and telegraphs was changed to government control. A reduction of heavy tariff duties was here demanded, and this is the only out-and-out demand of the kind made in the five platforms. The others content themselves with the statement that the revenue of state and nation should be limited to expenses.

The Cincinnati gathering represented no real purpose at the time of its meeting. It was composed of the discontented and the ambitious, and was not representative of any large number of voters. The convention opened with the singing of "America" and the Lord's Prayer. These were given with an earnestness that spoke well for the convention and showed that they came from the honest, sturdy, farming class that has so often been the stay of the country, and whose tendency has been toward conservatism rather than toward radicalism. The proportion of the delegates from the various states was very unequal. About two-thirds of the states were represented, but out of the 1500 persons present, 407 were from Kansas, 317 from Ohio, and 100 from Illinois. The majority of the assembly were farmers, while the remainder consisted of representatives of the various labor societies. The purposes of the men were widely divergent and the movement to make a third party was by no means unanimous throughout the country. In vain some of the leaders protested against the formation of a party at that time, hoping to defer the matter until the following year. Their opposition was brushed aside and the party was launched with a platform. The platform is based on the Ocala platform, but contains some political measures, and a few Knights of Labor pledges, such as the eight-hour day. The planks of the platform are as follows: free coinage of silver, abolition of national banks, loans on land and real estate, sub-treasuries, income tax, plenty of paper money, government control of railroads, election of president, vice-president, and senators by direct vote, non-ownership of land by foreigners,

revenue of the state and nation limited to expenses, eight hours' work, and universal suffrage. Three of these measures are sops thrown to certain classes. The election of president, vice-president, and senators by popular vote is a bait for votes. So is the universal suffrage scheme. The eight-hour plank was adopted only after much objection on the part of the farmer, for he sometimes has to work sixteen hours and never less than twelve, so that he is not naturally in sympathy with the eight-hour movement. Policy sways him, however, and so this plank was added to the list.

The St. Louis convention was held some ten months later, February 22, 1892. This was the preliminary convention for the selection of a national committee with the power to call a national convention to nominate candidates for president and vice-president. The convention was by no means harmonious, for there was a contest between the Southern Alliance and some of the Northern members for supremacy in the convention. It ended in victory for the northern faction. This convention again framed a platform, containing nearly the same planks as the year before. The planks referring to the abolition of national banks, universal suffrage, direct election of president, vice-president, and senators, and government control of railroads and telegraphs, were omitted. In the place of government control, government ownership of railroads was substituted. A scheme for postal banks was also tacked on.

The Populists now cut loose from their former platforms, and based all their speeches, demands, and speculations on the next platform, — that of Omaha. The Omaha convention was the first presidential-nominating convention held by the People's Party. The delegates assembled on July 4, 1892, closely watched by the press and people of the country. It was recognized as a turning point in the history of the new party, which would either put itself on record as favoring sensible measures or it would not. The platform of this convention bears the same stamp as did the others. Free coinage of silver, a minor clause on abolition of national banks, a sub-treasury scheme or some similar system, a graduated income tax, plenty of paper money, government

ownership of railroads, election of senators by direct vote of the people, non-ownership of land by foreigners, revenue of state and nation limited to expenses, eight hours' work, postal banks, pensions, and prohibition of the present contract law and immigration system, — these were the measures advocated. The various platforms have been on the whole very much alike. There has been, however, a gradual increase in the number of demands. The St. Louis platform of 1889 contains only eight planks; the Ocala, eight; Cincinnati, twelve; St. Louis, 1892, ten; and the Omaha, thirteen. Free coinage, government control or ownership of railroads, the sub-treasury scheme, sufficient paper money, revenue of state limited to expenses, and non-ownership of land by foreigners are the demands put forth in every platform. During the last three years nothing has been said about the prohibition of futures. The trade in futures has been one of the chief elements of complaint among the farmers; but the party has abandoned it as an issue. The real issue, according to the Populist, is financial. The party, by taking one side of the money question, hopes to force one of the old parties out of the field, and thus to place itself in a position of power as one of two parties, instead of being a mere third party.

II

THE OMAHA PLATFORM

The Omaha platform is the last of the national Populist platforms. It contains the most advanced theories and demands of the new party. In fact, the older platforms are seldom mentioned in the literature of the organization or by the speakers who present its cause. But the Omaha platform is called a second Declaration of Independence, — an idea properly suggested, not by any material which the platform contains, but by the day, July 4, on which the convention assembled. The preamble of the platform is the most curious part of the entire production. After invoking the blessing of Almighty God upon the convention, it goes on to say that "We meet in the midst

of a nation brought to the verge of moral, political, and material ruin. Corruption dominates the ballot box, the legislatures, the Congress, and even touches the ermine on the bench. The people are demoralized. The newspapers are largely subsidized or muzzled, public opinion silenced, business prostrated, our homes covered with mortgages, labor impoverished, and the land concentrated in the hands of the capitalists. Urban workmen are denied the right of organizing; imported pauperized labor reduces their wages, while a hireling army shoots them down. The toils of the millions are stolen to build up colossal fortunes. From the prolific womb of governmental injustice we breed the two great classes, — tramps and millionaires." After this description of the condition of the country, the preamble goes on to speak of the contraction of the currency and demonetization of silver. It calls attention to a "conspiracy against mankind," in which the currency is to be "abridged in order to fatten usurers, bankrupt enterprise, and enslave industry." Then follows an arraignment of the existing parties with their attempts to "drown the outcries of a plundered people with the uproar of a sham battle over the tariff, so that capitalists, corporations, national banks, trusts, watered stock, the demonetization of silver and the oppressions of the usurers may be lost sight of." After a statement of the belief that "the republic cannot live unless based upon the love of the whole people for each other and for the nation," and a pledge "to correct the evils which are destroying it, with wise and reasonable legislation," the preamble ends with the three following doctrines:

1. "That the union of labor forces of the United States this day consummated shall be permanent and perpetual."

2. That "Wealth belongs to him who creates it, and every dollar taken from industry is robbery."

3. That the people should own the means of transportation; and should such a thing come to pass, there should be a rigid civil-service regulation, so as to prevent the increase of the power of the national administration by the use of such additional government employees.

Such is the remarkable address which precedes the platform of the new party. It depicts a condition of the country which

the inquiring mind is unable to substantiate. It arraigns the political parties as separate from the people and lays at their feet the responsibility for the condition of affairs. But the parties which have brought about these calamities are composed of the people, and their effort of self-government must, in consequence, have brought them to the state described in the preamble: a people who, if such a condition exists, are not capable of governing themselves; a people who must have been deficient in ability to grasp the first principles of economics; a people who are unable to see and much less to follow their own interests. Nevertheless these people are to be intrusted with greater responsibilities and greater opportunities to make or mar themselves, — not by the parties which have already brought them where they are, but by the one which poses as their savior. There is an apparent incongruity when one views the subject from this last standpoint, as well as a strong impression that the address has been injured by over-statement.

The real platform which follows is much less ardent and, therefore, demands more serious attention. It can be divided into minor and major planks. The minor planks treat of the tariff, pensions, contract labor laws, an eight-hour working day, and election of senators by the people. The major planks relate to currency, re-establishment of silver, government ownership of railroads, and the limited ownership of lands. This division, while somewhat arbitrary, has nevertheless a natural basis, in that the party considers the problems of money, land, and railroads as the most important.

In the past the tariff has always occupied an important place in the platforms of political parties. The contests of the last ten or twelve years have been fought with this question as the main issue. Notwithstanding the strong hold which the tariff has upon political parties, the People's Party has deemed it best to pass by this bone of contention. The word "tariff" is not used in the Omaha platform, and there is very little to indicate the position of the party in regard to it. In the last lines of one of the sections is found the statement: "We demand that all state and national revenues shall be limited to the necessary expenses of

the government, economically and honestly administered." We are told that this part of the section contains the party's views on the tariff. The refusal to make a definite statement is not altogether inconsistent with the party's opinion that the tariff subject is a back number, that it is either already decided or at least less important than the currency question.

Both of the old parties maintain that the view thus ambiguously stated is in accord with their platforms. Curious editorials have appeared in the papers of the South and West upholding the claim that the new party's tariff views are not antagonistic to Democratic or to Republican principles. This has been the case when either of the old parties was trying to engineer a fusion with the Populists. The Democrats regarded the section as in perfect accord with the declaration, "tariff for revenue only," while the Republicans were no less vehement in their protestations that it was in harmony with their doctrine of "protection with incidental revenues."

In reality the stand of the party on this point is nothing more than a "straddle." In the Populist ranks are two factions which must be satisfied, — the laborers, who suppose that high wages and protection are somehow connected, and the farmers, who receive no protection and because of protection have to pay higher prices for what they buy. This apparent indecision of the party is due to the real antagonism of these two classes. Coupled with this antagonism was the necessity of drawing votes from the old parties. As both sides of the tariff question are already represented by the two old parties, it was perfectly natural that the new one should attempt to avoid any declaration on this subject. What are the "necessary expenses" of a government? They cannot be easily determined. A progressive government needs a great deal of money for "necessary expenses"; very heavy taxes (tariff or revenue) might be needed to meet its demands.

The section on the abolition of national banks was necessitated by the general money plans of the party. The tendency has been toward the reduction of the circulation of national banks and a minimum use of their function of note-issue. The People's Party regards the national banks as responsible for the decline

in circulation; but it is really due to the fact that note-issue is no longer profitable. The party complains that the national banks do not perform the functions which they are bound by law to do, and demands their abolition. In suggesting such a change, the Populists must undertake to provide a currency suited to the needs of the country. This has not been done, except through the sub-treasury scheme, which is by no means accepted by the party as a whole. The plank was placed in the platform to satisfy the general prejudice against national banks, which are regarded as direct roads to wealth.

The characterization of the present contract and immigration laws as inefficient, coupled with the demand for their abolition, was undoubtedly a concession to the labor societies, which were represented at the convention by delegates. Naturally the farmer is not opposed to immigration; for he is an employer of labor, and the influx of immigrants into the more unsettled regions of the South and West enables him more easily to harvest his crops and enlarge his business. It is much the same as an increase of his capital, because it increases the number of laborers and thus lowers the price of labor. The farming element, too, objected to the plank favoring eight hours' work for the laboring man, when the farmer is compelled to toil from twelve to sixteen hours. But in order to win this element it was necessary to introduce the clause favoring the eight-hour day. The platform also favors pensions, — a patriotic thing, but smacking somewhat of political effect. Yet the party could hardly remain silent on the question.

The election of senators by the people cannot be called a political issue, but the People's Party, in voicing the sentiment that senators shall be elected by the people, has done a good thing.

The reader can easily observe from the analysis of the planks given thus far that there is a contradiction in some of them, in others evident attempts to please two factions. In fact it must not be taken for granted that all the members of the party favored all the measures set forth in the platform. The planks as a whole were compromises. In the Ocala convention there were elements which favored free coinage, but were against the sub-treasury

scheme; another clique wanted a graduated income tax, but refused to vote for government ownership of telegraphs and railroads. In the Omaha platform, however, these were brought in and became the most prominent demands. The transition was not accomplished without bitter contests. The radicals of the party pulled the conservatives into line and succeeded in putting their stamp on the platform. But as the party grows older it is likely to get to more solid ground; for experience will teach the rank and file that success does not lie in radicalism. Meanwhile there are two factions in the party, between whom there may not at present be any broad line of distinction. This is due to the fact that one faction, representing the laborer, is greatly inferior in numbers to the other, the farmers. The movement originated among the agriculturists, and it is they who are carrying along the laborer while trying to advance their own cause at the same time. There is no real common bond between the two except that of discontent. On the question of Capital *vs.* Labor, there is, indeed, some common ground, since the farmer believes he is oppressed by the "gold-bug"; and here the two factions at present have a common interest.

Although the farmer does not want eight hours' labor, or restricted immigration, he does not object strenuously to either one. In fact they are, in a way, a matter of indifference to him; he allows them to be included in the platform and as a matter of policy he considers it best to put them there; but these are only minor details. Will he give way or compromise, however, when it comes to more important things? Just here is where the party is liable to be wrecked, — through internal conflict. The feelings of the more advanced will be apt to clash with those of the more conservative. Moreover, the tendency to compromise in order to gain votes and favor from certain interests will undoubtedly pervert the party intentions and ideals.

III

LAND, FARMS, AND MORTGAGES

The land, including all the natural sources of wealth, is the heritage of the people, and should not be monopolized for speculative purposes, and alien ownership of land should be prohibited. All land now held by railroads and other corporations in excess of their actual needs, and all lands now owned by aliens should be reclaimed by the government and held for actual settlers only. — Omaha Platform

At the close of the Revolutionary War the states of the old confederation found, among other things, a land question confronting them. The land extending from the Alleghanies to the Mississippi River was claimed by Virginia, North and South Carolina, and Georgia, as well as by New York, Pennsylvania, and Connecticut. By a series of magnanimous gifts, most of the states surrendered to Congress these conflicting claims. These gifts were the foundation of what is known as the public domain. To this early possession the United States has added through purchase, cession, and conquest, lands more extensive in area than all the countries of Europe excepting Russia.

This public domain has always been regarded as belonging to the people, and it has been the policy of Congress to place them in possession of the lands as fully as possible. The doctrine that the prosperity of the people must rest largely on the possession and cultivation of our extensive territory has been kept well in mind during the last seventy-five years, and the result has been that land has been distributed liberally, even though without much regard to the ultimate possessor. This was done primarily to maintain a continual progress in population and development of the country.

The sum total of the various lands composing the public domain at different times was, in 1890, 2,894,235.91 square miles, or 1,852,310,987 acres. The actual domain which came into the possession of the United States was only 1,821,700,922 acres; for the area now composing the state Tennessee had been granted before the formation of the Union. This vast amount

of territory was not acquired in a single year, but by skilful negotiations and careful treaties extending over a period of seventy-five years, the Gadsden Purchase of 1850 being the last. At an early date the government granted a considerable number of acres in the Ohio valley to the soldiers of the Revolution as a reward for their services, and allowed them afterwards to purchase land at a small price. Then came the idea that the sale of the public lands would relieve the people of an equal amount of taxes. So land was disposed of by public and private sale until 1848, when the policy of sales was changed: The soldiers of the Mexican War were allowed one hundred and sixty acres each. Under the pre-emption system, first inaugurated in 1838, the lands were sold for cash to settlers who could occupy, improve, and cultivate them for a number of years; but the Homestead Act provided for the gift of land to the actual settler. The Homestead Act was passed in 1862, although the agitation for it began some ten years earlier. By these two acts the early idea of sales for revenue was abandoned, and a plan for the disposition of homes substituted, which was more in line with the general policy of the government.

Out of the original 1,821,700,922 acres of public lands, (399,755,118 acres of this are said to be mountainous) there remained in 1890, vacant and unoccupied, 586,216,861 acres, or less than one-third of the original domain. Up to 1890 the United States had granted to corporations and states, for canals, railroads, river improvements, and wagon roads, 337,740,081 acres, leaving some 430,948,710 acres to be accounted for by the Pre-emption and Homestead acts, military bounties, and lands held by railroads but not patented up to June 30, 1890. This makes a grand total of 768,688,991 acres that have passed out of the possession of the United States during the last hundred years. Of the 586,216,867 acres now in the hands of the government, only 1,700,000 are suitable for agriculture, the remainder consisting of grazing, coal, and mineral lands.

The tendency at first was to regard the public lands as a means of revenue, and large quantities of land were sold to capitalists and speculators; but the income received did not come up to expectations, and the continual clamor of the people that the Public

Domain belonged to the public, compelled the government to change its policy. Under the Pre-emption Law the actual settler was given the preference and protection of the government. Many settlements were made under the law, although the vastness of the territory and the inability to locate all the claims enabled sharpers to manipulate the law to their advantage. On the other hand, it enabled settlers to secure 640 acres of land — as much as any man needed — at a low price. The Homestead Law was a further increase of the generosity of the government: under it the West was rapidly settled. Like the Pre-emption Act, it was greatly abused, and the loose taxation laws made it possible to hold property without any expense. As land was pre-empted and small towns sprang into existence, there came also the necessity for railroads. March 2, 1833, Congress authorized the state of Illinois to divert the canal grant of six years before, and to construct a railroad with the proceeds of said lands. This was the first Congressional enactment providing for a land grant in aid of a railroad, but it was not utilized by the state. Other grants followed, until some 171,014,978 acres had been given by the United States and by the various states for railroad purposes. All this land was given on the condition that within a specified number of years railroads should be built between certain designated points. A portion of this land has been forfeited by non-performance of contract; but in most cases where the railroad declared itself unable to carry out its agreement, Congress good-naturedly extended the time. The greatest abuse of the grants, however, was the issuing of certificates before the road was built. In this way the company was able to hold its grant, and at the same time, since in appearance at least the government owned the land, the company escaped taxation. The burden which they thus avoided naturally fell upon those who owned land in their own names. Meanwhile the railroad lands, though not cultivated, were increasing in value by reason of the growing population around them. They were sold to capitalists and others, who, purchasing thousands of acres at a time, in turn speculated upon them. Thus the final purchaser secured the land which he wished to cultivate at a price much higher than would have been asked by the government.

There was in the West at this time a political and business element which favored land speculation. It dominated the legislatures of the states, and its influence was felt more or less strongly even in Congress. Even under the Homestead and Pre-emption laws, land easily passed into the hands of speculators. The only check was state taxation; for the owners of land could not allow it to remain idle if taxes were levied, and in cases where the amount of land was too large to be cultivated, the owners would have been compelled to sell it. But the small owners were just as eager as the great corporations to avoid taxation. So laws were passed forbidding the grant of patents until the surveyor's fee was paid; and until a patent was obtained the land was not taxable, although it could be occupied by the intended patentee. What is now charged against the great corporations is really the result of improper legislation, and could have been avoided by a little legislative skill. It is true that taxes on the full value of farm lands would have rested heavily on the settler, but a proper reduction for debt would have made the whole system more satisfactory in the end. The railroads, on the other hand, mistook their own interests when they allowed land to remain unoccupied. Eventually settlements, farms, and towns along their routes would have repaid them in the increased business. As a matter of course, there has been no little chicanery about the land affairs of the nation; but the Land Office of the government has struggled hard to do justice and to protect settlers. Whatever of injustice exists will generally be found due to the failure of the citizen to attend to his part of the matter or in the failure of Congress to stop abuses by appropriate legislation.

None the less all these things aroused the opposition of the people when they began to see that they had made a mistake in their legislation and that speculators and land-grabbers had taken advantage of it. This opposition began in 1870, after the huge land grants to the various Pacific roads. It made "public opinion halt to give away to corporations a territory half as big as Europe." The people watched with indignation the course of the land companies into whose hands the greater part of the grants fell. The citizen of the United States, it was felt, was being cut

off from his natural heritage. The doubt concerning early legislation was changed into the conviction that it was a mistake. It was during this time and a little later that foreign syndicates and noblemen purchased great tracts of land from the railroads. These lands were divided into great farms, used as cattle ranches, or sold in small sections to farmers. The foreign owners were always represented by managers, with whom alone the people came in contact. Misunderstandings often arose, and as a consequence, hatred for the foreigners. It was unpatriotic for foreigners to own land in this country; and this sentiment, coupled with the fear that a landed aristocracy would arise, added fuel to the opposition to great land holdings and the consequently unoccupied and undeveloped territory. This hatred of foreign landowners, however, has no real basis. It is a relic of mediæval civilization. Many serious and earnest men doubtless believe that it will virtually end in the nation's being transferred to the foreigner. But in reality the alien investor puts himself at our mercy. Compared with the resident owner, he is at a decided disadvantage in his business relations. Again, if he buys land or invests in some other form of property, he increases the value of the property around it. Considered from this point of view, the alien ownership in lands is not such a terrible thing, and hardly calls for the resolution of a political party against it.

For the last fifty years there has been more or less agitation in regard to the public lands. In 1852 the Free Soil Party incorporated in its platform the declaration that "the public lands of the United States belong to the people, and should not be sold to individuals nor granted to corporations, but should be held as a sacred trust for the benefit of the people, and should be granted in limited quantities, free of cost to landless settlers." In 1892 the People's Party said at Omaha: "The land, including all natural resources of wealth, is the heritage of the people and should not be monopolized for speculative purposes, and all alien ownership of land should be prohibited. All lands now held by the railroads and other corporations in excess of their actual needs, and lands now owned by aliens, should be reclaimed by the government and held for actual settlers only." This later

development of Free Soilism is much more radical than its predecessor of 1852, which was not a bad thing in its way, as it was partly the cause of the Homestead Law.

This land movement is demanded not only for the oppressed of the cities, who are to have the alternative of leaving the cities and taking to the land, but also for the mortgage-laden farmers of the West, who, as it would appear, are crushed under financial burdens too great to be borne, under the present circumstances.

Governor St. John during the campaign of 1894 made the statement that the farmers of the country have been laboring under a mortgaged indebtedness of from seven to eight billions of dollars. No one could deny the statement and at the same time support his denial with proof; and it went unchallenged. It was a short step from this to the declaration that the entire West was staggering under the mortgages held by the moneyed East, and that the farmers were the victims of a conspiracy to wreck their homes and seize their farms under the guise of law. These claims then entered into local politics, and their influence extended until several states were ruled by the party which had taken up the cry. Senators and representatives were elected, through whom the matter of investigation was pressed upon Congress. While the party grew rapidly, at the same time the people of those states said to be most heavily embarrassed found it more and more difficult to borrow money from the East. This was brought about by the reaction from the statements made for political effect. Capital refused to believe the conditions to be any other than those thus pictured, and withdrew investments as much as possible. In this way an economic question was dragged into politics, and there it remained, while its importance has been exaggerated by the need for political thunder. There is no doubt that the mortgage occupies an important place in the problems of the hour, but it is far from being a political question, nor can it be settled by the interference of any party.

A mortgage is not necessarily a disgrace or a sign of financial disturbance. On the contrary it may be a means of prosperity. It is only an evidence of a lack of capital on the part of one person, which has been supplied by another. The loan has been made

and security given for its payment. Men and women go West for the purpose of bettering their condition. If they had money or were contented with their lot, such would not be the case. Having secured land either directly from the government or as cheaply as possible from some other owner, they proceed to cultivate it at once. Their little stock of money is soon exhausted, and in order to make other improvements money must be borrowed, and the land is mortgaged. This case is repeated over and over again, until there are millions of dollars lent to the owners of Western farms. The money, however, is used for improvements. Churches, houses, towns, roads, drains, are constructed. Business enterprises have been set on foot, and the new country has advanced rapidly. The mortgage money has not been squandered; the development of the West is a proof of the statement. It has been a great advantage to the settlers and to the capitalists, and only through such means could this development have been possible.

The serious effect of a general mortgage indebtedness lies in the tremendous force it brings to bear in times of financial depression and the constant drain on production. It is in time of depression that the payment of interest is often defaulted. Payment at any time indicates that enough wealth has been produced by the cultivation of the land and other sources to pay the debt. But foreclosure means that the margin of value in the land has been swallowed up. Foreclosures, however, have been few in comparison with the number of mortgages, and this fact made Western mortgages a favorite investment with Eastern capitalists until a few years ago. Consequently more money was lent than could be profitably used and in many cases the farmer thus found himself in a hard place, barely able to meet the interest payments or compelled to foreclose. Foreclosure is a sure method of lowering prices, for it means the disposal of property at much less than its value. It is then placed on the market at a much lower price than was asked before the foreclosure, and as a matter of fact decreases the value of all property in its neighborhood. In some cases heavy interest has been charged and people have been imposed upon by fraudulent agents. From these cases an outcry has arisen against Eastern capitalists, who, it was said, had lent

their money at exorbitant rates of interest, taken mortgages, and were drawing from the state and impoverishing it. All these things have increased the cry that the entire West is mortgaged, and the inability to make ends meet is explained on the ground that the mortgage eats up the larger part of the product.

The late United States census does not corroborate this view of the question. In response to the demands of the West, the Census Bureau has made a careful investigation of the subject. Even if the figures have no positive value, their comparative value cannot be gainsaid. The entire mortgage indebtedness on June 1, 1890, was $6,019,679,985, representing 4,777,698 mortgages. The mortgages on acres amounted to $2,209,148,431 ; and on lots, $3,810,531,554. The number of acres covered was 273,352,109. Of this mortgage indebtedness, New York had $1,607,874,301 or 26.71 per cent of the total mortgage debts of the country.

Nevada's debt was $2,194,995, which was less than that of any county in New York. During the ten years of the census the increase in acres covered by mortgages was 65.36 per cent; in lots, 198.25 per cent. The mortgage indebtedness on agricultural land increased 70.98 per cent as compared with 216.80 per cent on lots.

The increase of values in the states of California, Florida, Washington, Nebraska, and Kansas has been sufficient to pay the interest at the average rate on the mortgaged farm for the ten years, and in the end to pay the principal. There are fourteen states in which the rise in value has more than paid the interest.

Twenty states, however, experienced an increase in value not sufficient to meet the interest charges, while ten others suffered a loss in the average value of farms per acre. In these states the loss in value and the interest charges have pressed hard upon the people. But six of these states belong to the North Atlantic, the other four to the Western division. On the whole the investigation has shown the mortgage indebtedness to be much less than was supposed and to be under more favorable conditions. That much-reviled state, Kansas, is grouped among those which have been able to meet interest charges and pay at least part of the

principal by the increase in valuation. The result of the investigation should be such as to restore confidence in those states where the conditions have presumably been so bad. In fact one would be led to conclude that the mortgages on the whole had exerted a beneficial influence.

IV

FINANCIAL VIEWS

Finance

We demand a national currency, safe, sound, and flexible, issued by the general government only, a full legal tender for all debts, public and private, and that without the use of banking corporations, a just, equitable, and efficient means of distribution direct to the people at a tax not to exceed 2 per cent per annum, to be provided as set forth in the sub-treasury plan of the Farmers' Alliance, or a better system; also by payments in discharge of its obligations for public improvements.

We demand free and unlimited coinage of silver and gold at the present legal ratio of 16 to 1.

We demand that the amount of circulating medium be speedily increased to not less than $50 per capita.

We demand a graduated income tax.

We believe that the money of the country should be kept, as much as possible, in the hands of the people, and hence we demand that all state and national revenues shall be limited to the necessary expenses of the government, economically and honestly administered. — Omaha Platform

The most important planks of the Omaha platform are those which relate to money. This importance is shown by the care and thought with which they are set forth, by the fact that the late campaigns have been fought with this currency issue as the prominent one, and because the main support of the party comes from states which are interested in silver; although it has been found that this support was not due entirely to the silver tendency of the party, but partly at least to other planks which are more socialistic in character. In addition to this is the attitude of the leaders of the party toward the money question in comparison with the remainder of the platform. They believe in a financial campaign, leaving the rest of the platform to be taken up at some

future time. These facts, coupled with the position of money in the economy of all governments and its effect upon the people, cause us to turn with great interest to this part of the subject.

Looked at from the standpoint of purpose, the financial views of this party can be divided thus:

(*a*) Incidental schemes.
1. Postal banks.
2. Income tax.
3. Government income.
4. Relation to industries.

(*b*) The expansion of the currency.
1. Free coinage of silver.
2. Increase of currency to at least $50 per capita.

(*c*) Modes of distribution.
1. Not by banks.
2. Sub-treasury.
3. Or a better system.

The first section (*a*) concerns us little, since the objects contained in it are not essentially Populistic, neither are they necessary to any particular system of currency. The income tax was passed by a Democratic Congress; and the matter of postal banks does not concern us very much. In reality these are minor details which do not change the position of the party. But the second (*b*) and third (*c*) are of the utmost importance.

The claims and demands of the party are to be found in the platform and in the bills which have been presented by its representatives in Congress. The platform demands free coinage of silver at the ratio of 16 to 1, and the increase of the currency to at least $50 per capita. These two planks can be regarded as requests for an inflation or perhaps, in juster terms, an expansion of the circulation. The bills introduced in the Senate by Senator Peffer are similar to those offered by his colleagues, and are to be interpreted as evidence of the intention of the party, should it gain power enough to bring about such legislation. These bills, twelve in number, would increase the monetary circulation of the United States to an amount ten and a half times as great as that of the currency now in use by all the nations of the world. They

call for a circulation of $95,150,000,000. The platform is conservative beside them, but the two must be taken in connection with each other, — the platform as the cause, the bills as the effect. The planks which refer to the mode of distribution of the currency have been passed over by the party, more stress being laid on the free coinage of silver and the increase of the circulation. In fact the entire energy of the party seems to be bent toward financial reform.

When the new party determined upon the abolition of the national banks it was necessary to offer some substitute by which the currency of the country might be circulated. The wording of the platform in regard to this point reads as follows:

> We demand a national currency, safe, sound, and flexible, issued by the general government only, a full legal tender for all debts, public and private, and that without the use of banking corporations, a just, equitable, and efficient means of distribution direct to the people at a tax not to exceed 2 per cent per annum, to be provided for as set forth in the sub-treasury plan of the Farmers' Alliance, or a better system; also by payments in discharge of its obligations for public improvements.

Under the plan of the Farmers' Alliance, the issuing of money comes under one or two alternatives, — "either the government must permit the individual citizen to issue scrip based in some manner upon his own labor products, or the government must itself supply him with money notes at cost, as it now furnishes them to banks." The first is acknowledged to be a worse than useless form of money, for it would not circulate beyond the immediate neighborhood of the issuer and would not meet the exactions upon it. The only way left, then, is for the government to furnish currency directly to the people, the cost of printing, issuing, and other expenses to be borne by the one first receiving the money. In return he must give ample security and must promise to pay the loan in a reasonable time. The government burns the scrip when it is returned. The security acceptable to the government is to be, if it is so desired, non-perishable farm products, real estate, and manufactures. The borrower is to receive in notes 80 per cent of the value of the product deposited. These he may use as he wishes. When

the value of the security decreases, the borrower must increase his security or give up the loan. In this way the government is to be made secure and can indorse the notes with safety. Such is the sub-treasury plan. It will naturally necessitate a greater number of warehouses, clerks, and complicated accounts than was at first assumed. The whole plan is based upon the hypothesis that farm products are a safe basis for loans, and upon the old ideas of a cheap currency, the need of the people for money, and the inelasticity of the prevailing system.

The sub-treasury plan is neither more nor less than the application of the national-bank system to the individual. That is, the individual is to be allowed the privilege of the banks to make a deposit and to receive in return a certain amount of money based on the value of the security. In principle the sub-treasury plan is much like the so-called "Land Bank" in Massachusetts in 1714. There is, however, considerable difference as regards the details. The sub-treasury scheme is broader in its allowance of securities and the borrower pays a much lower interest. The "Land Bank" was periodical: the issues were made for a period of years; while the later plan proposes continuous issues at all times and in any amount. In this way the money system is not disturbed and the fluctuation caused by the redemption of all notes at one time is, at least to some degree, avoided. The mistakes of the Massachusetts "Land Bank" are to be avoided by this continuous currency at a low rate of interest, but the basis of the plan is not a stable one. At times real estate fluctuates greatly; the same is true of corn and the various products of the farm. This is met by the provisions for additional security or the redemption of the loan. The whole theory is fairly plausible, but the cumbrous machinery required to make it practicable would in time destroy its usefulness. Then again, the plan extends only to farm products and to real estate as securities. The natural consequence would be a boom in these two things, since those desiring loans would have to possess one or the other to give as securities; and at the present time it would be almost as difficult to obtain them as to get money. The government would be compelled to have warehouses in which to store its

farm securities, and an army of expert clerks to keep accounts of the various transactions. But more objectionable than all this would be the ease with which this currency could be controlled by the capitalist. Farm products would be bought up by the capitalist, dumped in the warehouses, and a loan of astonishing size would then be secured. Moreover, there would be every incentive for the capitalist to do this, since he would be able to get money at 2 per cent instead of at 4 per cent or 5 per cent as he now does. Any plan now advanced by the People's Party will probably be one which involves the same principle, that is, of cheap money, unlimited in amount, and issued on land and other securities. But paper currency cannot be issued against land, for land has no adaptability as money. Nor can mortgages on real estate, government, state or railroad bonds, perform the same service. Paper currency is but a "promise to pay on demand," and the thing in which it is payable must have the qualifications of money. Consequently if the borrower fails to meet his note, the government takes the security which the note holder does not want. He demands gold or silver; but this the government does not possess for the purpose. Thus gold and silver coinage manifestly fails to fulfill its proper function in a money system.

The demand for more money per capita has usually come from the South and West, where the conditions were such as to cause a scarcity of money. A new country always needs capital. It is the comparatively poor who emigrate, and they require everything, from ploughs and machinery to household furniture. The consequence is that the capital which goes into money is begrudged more than anything else. They do not want to hold anything in the form of money, but spend it for tools and necessities brought from the older parts of the country; thus the cash goes out of that section, and when they are ready to sell their products, they find that they must wait for the money to return. Meanwhile prices are apt to decrease, and thus the whole system works to their disadvantage. Realizing that such is the case, a cheap money is demanded, sufficient in amount for all practical purposes. Any plan tending to secure such a result is at once joyfully accepted by a large number of people. Most urgent in

their demands are those who have nothing to lose and everything to gain. In 1728, persons of large obligations and decayed fortunes found that the greater the depreciation of the currency the more easily debts were discharged. Men of this class, having a personal and selfish object in view, were more persevering than those who opposed them on public grounds. The people of 1896 have made the same discovery. Money is in all these cases confounded with capital: an ample and cheap currency will mean capital easily secured,— this is their hope. Depreciation sets in, however, because the money has no substantial base and is too freely issued. There is a flow of wealth from the creditor to the debtor. The latter pays his bills in a constantly decreasing money value, and thus property passes from the industrious to the speculator and gambler. The larger the debt the greater the gain. Under these circumstances the more a man owes for value received, the better off he is. The capitalist suspends active operations, stops the plants in which he is interested, while those who live on salaries and annuities find themselves in a distressed condition. Then comes the reduction of redundant currency. Property shrinks in proportion to the old prices; goods bought must be sold at a sacrifice. Prices go down; confidence is destroyed, and a financial crisis crowns the inflation. Such has been the experience of the past; such will be that of the future, if we resort to such expedient as the sub-treasury plan, or to a currency like the one proposed by the new party.

V

GOVERNMENT OWNERSHIP OF RAILROADS

Transportation being a means of exchange and a public necessity, the government should own and operate the railroads in the interest of the people.

The telegraph and telephone like the postoffice system, being a necessity for the transmission of news, should be owned and operated by the government in the interest of the people. — Omaha Platform

The rapid growth of the railroad immediately after the war, and the Granger agitation and legislation of the seventies, brought

railroad matters and the question of their ownership by the government before the people with much force. Since then this question has grown in importance; the working-men have taken it up and a party has made it the subject of one of its platform planks. There is a quietness about all this movement (agitation if you wish to call it such) which is apt to give the casual observer the impression that it is not deeply rooted. But the indications are that should the matter come to a vote, the question would be decided in favor of government ownership of the railroads. Popular opinion regardless of party is liable to break out at any time and secure the measure desired. The reason that it has not yet reached this stage probably lies in the multiplicity of problems before the public, which need solution far more than does the railroad question. In this agitation the People's Party as a whole occupies an extreme position. It not only hopes for the cessation of abuses, but for material aid in the way of low rates and reduction of taxes, brought about by the government's use of railroad earnings.

To a very great extent this party has taken advantage of the demand for government ownership of the railroads, in order to secure support where perhaps it might otherwise fail to find it. In the West there has always existed more or less hatred of the railroad, and any movement to change the ownership would be sure to secure much support.

The popular feeling in favor of government ownership is largely due to the newspapers and periodicals. Despite their unreliability they are believed, and must be considered in connection with the causes of the Populist movement. Probably the earliest demand for government ownership was on the ground of extortion. The idea soon prevailed that a railroad was an instrument by which certain Eastern capitalists were to be enriched by the plunder of those unfortunate enough to be obliged to use their road. This view has been deeply rooted in the minds of the early settlers, who were perhaps justified in its assumption. The feeling of injury has been increased by the tales of watered stocks and land deals, — containing a great deal of truth, but much magnified for political purposes.

As a complement to the sweeping charges of extortion, comes the dream of low rates and large savings when the government shall own the railroads. A great many writers on railroad topics insist that the economy of the government management over that of private management would be very great. The annual saving by such operation is estimated from $110,000,000 to $160,000,000. One writer more enthusiastic than the others, in a pamphlet for sale by the national committee of the People's Party, believes that government ownership will result in low passenger rates and free freight rates. "This possibility," he says, "is due to the fact that the amounts which have been taken from the people will be honestly used." Such a view is rather an extreme one; but there is no doubt that the advocates of government ownership hope for a liberal revenue from the railroads after they have come into the control of the government. This revenue is to pay for the roads, and reduce taxes in an astounding way.

The real point in all agitation of this sort is not as to whether it is a good thing for the country, but whether it will secure a majority for the party. If the latter will not result, we may look for the disappearance of this plank from the platform. Although government ownership appears in the platform of the People's Party as essential to its creed, nevertheless it is not accepted by all the members of the party. While there is a large majority who firmly believe in the ownership of the railroads by the government, the more conservative and abler men of the party, on the other hand, are much in doubt as to the practical outcome of the experiment. Senator Allen, of Nebraska, one of its strongest men, in an interview published in the *Review of Reviews*, expressed the belief that the best way to bring the matter before the public would be to take one of the Pacific roads and try the experiment. He added, however, that he was in doubt as to the success of such an undertaking.

Firm as the opinion seems to be on this point, there is and has been a faction which has insisted all along that there was another matter far more important than the railroad question to be dealt with, — the currency question. The party started out with a variety of economic questions, on about the same basis, but one by one

they fell to their natural places until this one stands out more prominently than the rest. Replying to its contemporaries concerning the action of the Populist national committee in allowing silver to forge ahead of government railroads and related questions, one of the Populist papers says in an editorial:

> Those who fear a one-plank platform would do well to look over the present and immediate past. They would learn that the contest for the past two years has been waged on the single plank of financial reform. . . . Whether wanted or not, whether urged by special resolution or not, whether deprecated or not, the single plank of financial reform, with free coinage of silver as its leading feature, will be the overshadowing and dominant factor in the People's Party contention until that proposition is satisfactorily settled. We believe in accepting the situation and shall continue to do battle for financial reform in preference to all other demands of the party.

From this and other utterances, one is led to believe that the question of railroads is not at present so important to the People's Party as the platform would lead one to believe. The currency contest is likely to be long and bitter, and perhaps in the end satisfactory to no one. The Populists have been forced to pay more attention to one issue than another by the conditions prevailing at Washington and throughout the country; and they have been by no means slow to use their balance of power to force attention to their silver views. Silver being an issue unlike the other features of the platform, they have concentrated their forces on the one plank of financial reform and allowed the others to remain in the background.

VI

IS THE PEOPLE'S PARTY SOCIALISTIC?

From reading the accounts of the various Populist conventions, and the speeches of prominent men in the new party, it has been very difficult to determine whether or not the party is socialistic. The action of the conventions indicated one thing, the speeches another. It is true that the Omaha platform was in existence; and yet the continued references to other issues than those raised in that political manifesto gave the impression that the planks

were not so universally accepted as had been supposed, and that the whole party was drifting away from them. Such was the belief entertained by the general public; while behind the scenes a battle was being carried on between the silver and socialist elements in the party itself, — a one-plank platform versus the Omaha platform. The radicals wished to sustain the latter, while the conservatives desired the party to drop all issues except that of silver and fight only for financial reform. These two elements were at sword's points over the apparent insignificance of silver in the Omaha platform. The radicals were conservative silver men, while the conservatives were radical silverites. The silver men had entered the party more for the purpose of booming silver than to mitigate the wrongs of the oppressed. The Congress of the United States had passed the Sherman Act and later had repealed it, so that the silver men could hardly expect any support from the old parties. They saw a way out through the new party; but they had not taken into account the real causes of that party's existence, and consequently failed to secure any great advantage for silver. Meantime both Republicans and Democrats have turned like needles to a loadstone in the direction of silver, and the silver men have hurried from the different parties, including the People's, to the neutral grounds where the advocates of this coinage seem universally to be gathering.

This contest has been waged from the very beginning of the party. It began in debates and ended in a party rupture; for the long-expected crisis has now occurred and the true Populistic element has broken away from the silverites, and stands firmly on the Omaha platform.

The leaders of the party favored the silver side of the fight, but the rank and file of Populism was not to be beguiled by any such sentiment. The silver men attempted to undermine the platform, but without success. Every time the question was brought up a contest ensued, in which the silver men were driven to the wall. In the conference of the Populist leaders at St. Louis in December, 1894, a desperate attempt was made to change the Omaha platform, but the great majority of delegates at the conference voted to re-affirm it. Since that time the one-plank

silverites have tried to get control of the conventions in Chicago and Cleveland, held for the purpose of nominating city officers. Chicago and Cleveland are strongly Populistic, hence the battles in these two cities were significant of the strength of the two factions in the general party. In Cleveland there was no evidence of any silver element, while in Chicago the silver champions were forced to remain silent. The same experience has been repeated in the state conventions, and even in the silver states the leaders of this movement were not able to control the Populist Party. The presence of the silver faction has obscured the real purpose of the party to such an extent as to render the question at the head of this chapter a pertinent one. But the defection of this element leaves the originators of the party without the screen of free coinage. The two tendencies have been pointed out, and the student of this party movement can discern the motives without the perplexing presence of cross-purposes.

The government has very materially aided the development of the West. Large sums of money were there spent, and large tracts of land were given away to encourage immigration. The Pacific railroads received both money and land from the government, and states were given thousands of acres for educational purposes. The national government has also built roads and aided in the construction of canals. In addition to all this the Homestead and Pre-emption laws opened large tracts of land which were to be had in small lots for the asking. The legislatures of the various Western states have been very ready to help this or that undertaking, in order to advance the states. All this led to an exaggerated conception of the power of government to accomplish large results in bringing about prosperity. The government's policy has made some men rich, and has also accustomed the people to look toward Washington whenever they were hard pressed or wanted legislation to assist some contemplated enterprise. This reliance upon Washington has passed through various stages, until now it manifests itself in the demand that the government shall own and control the railroads. It is not to be understood that the idea of paternalism in government has of itself developed to the point of socialism; but

the principles of government extension, public ownership and management, have fallen upon ground well prepared for them. The consequence has been a rapid growth of these principles and a general belief in them.

As a result the people of the West are divided into three classes, separated only by their distance from the first, which forms the nucleus of the People's Party. In reality this first class is composed of socialists; the majority would probably admit that they were such. In the second class are to be found many farmers, laborers, business and professional men, who are not Populists, but who favor government ownership of railroads and telegraphs and an extension of government activity. This class fear the word "socialist" and in their hearts regard the socialist as a species of bomb-thrower who is at war with society. Hence they cannot see the similarity between their own belief and that of the socialist. The third class consists of men who repudiate socialism even more plainly than the second, but who are nevertheless declared paternalists.

Such, in the main, is the situation in the West. As a matter of course there are many exceptions, but the large majority of the people belong to one or the other of the classes mentioned. Under such conditions the Populists have naturally received much sympathy, and the very fact that they have had sympathizers has encouraged them to express their views much more forcibly than they would otherwise have done. This fact has also given them sufficient force to hold out against the strategies of the silver men, and by the exhibition of their power to add strength to strength.

Strong as has been the spirit of paternalism in shaping the beliefs and opinions of the West, there has been at work another force, perhaps even more potent and active, — that of railroad oppression. The Pacific railroads from the first watered their stocks. The earnings at ordinary rates were insufficient to warrant dividends on the increased capitalization. In order to pay these, an enormous income was necessary, and the only way to obtain this was to impose heavier charges on freight, and for many years this practice was maintained. Although the rates

were reduced later, the extortion practiced has caused a hatred of railroads and other corporations. Protests arose from all sides, and the Farmers' Alliance with other similar organizations, shaped the movement until the meeting at Cincinnati in 1891 brought the People's Party into existence. Although there were other material causes of the movement, it was the sentiment of the Western representatives which shaped the platform in regard to railroads and telegraphs, and from this section came much of the socialism introduced into the platform.

The question naturally arises, Why do the socialist papers hurl all kinds of invectives at the new organization and, if it is really socialistic, refuse to consider it worthy to be classed with socialistic parties? A quotation from the *People*, the leading journalistic exponent of that belief in the United States, may cast some light on the question. "The plan of the silverites to make the People's Party more reactionary than it was, has been substantially carried out." So long as the silver element in the party was not predominant, the socialists had no objections to the platform of the Omaha convention; but when financial questions began to overshadow the other planks, then the cry of "We told you so" was raised, and the People's Party was declared to have betrayed the principles set forth in its platform. The *National Watchman* said soon after: "The time for Populism and Socialism to part has come, and those who fail to realize the situation will have, in the future, ample time to reflect upon their error in judgment. What we want now is a clear-cut, aggressive, intelligent propaganda upon financial reform." Even this conservative Populist paper recognized the fact that there is such a thing as socialism in the party. The parting did come at Omaha, but not as then hoped by the writer of the editorial. The silver and financial reform advocates instead of the adherents of the entire platform were forced to retire.

The Omaha platform of the People's Party is a remarkable document in many ways, and one of its peculiarities is the ambiguity encountered at every turn. Its whole tone is socialistic. Yet if the charge of socialism were brought against it, the defender of the platform could at once deny the assertion, and

define the section attacked in such a way as to refute the statement. This ambiguity is due to the two opinions prevailing in the convention which framed the platform, and to the endeavor to satisfy both. There was, on the one hand, the real element of the party itself and, on the other, the silver advocates who had been drawn to the new party in the hope of advancing their cause. It was for the purpose of appeasing the more conservative element that the platform was softened in places and the utterances on certain subjects made less positive. But despite the ambiguity of the platform as a whole, there are to be found certain positive declarations of principles which may be compared with the purposes of the socialist. By this means the real similarity of the two views, if there be any, will appear.

SOCIALIST[1]	PEOPLE'S PARTY
1. Abolition of inheritance in land or other means of production, such as machinery, railroads, telegraphs, and canals.	
2. Abolition of private property in land or any other means of the production of wealth.	
3. Abolition of wages system.	
4. Abolition of competitive system.	
5. National ownership of land.	"The land, including all the natural sources of wealth, is the heritage of the people and should not be monopolized for speculative purposes."
6. National ownership of railroads and telegraphs.	National ownership of telegraphs and railroads.
7. A graded income tax.	A graded income tax.
8. A paper currency or fiat money.	A paper currency or fiat money.
9. Abolition of national banks.	Abolition of national banks.
10. The public lands to be declared inalienable. Revocation of all land grants to corporations or individuals, the conditions of which have not been complied with.	"Alien ownership of land should be prohibited. All lands now held by railroads and other corporations in excess of their actual needs should be reclaimed by the government and held for actual settlers only."

[1] 10 in platform of Socialist Labor Party of the United States; 11, 12, 13, 14 in platform of Central Labor Union of Cleveland, Ohio; 1–9 given in Cook's "Socialism and Universal Suffrage," p. 19.

11. Establishment of postal-deposit and savings banks.	"We demand that postal savings banks be established by the government for the safe deposit of the earnings of the people and to facilitate exchange."
12. Adoption of constitutional amendment requiring the election of president and vice-president by the direct vote of the people. Also providing for election of the United States senators by direct vote of the people.	"That we favor a constitutional provision limiting the office of president and vice-president to one term and providing for the election of the senators by a direct vote of the people."
13. Rigid enforcement of eight-hour law in all public departments.	"That we demand a rigid enforcement of the existing eight-hour law on government work, and ask that a penalty clause be added to the said law."
14. Adoption of the initiative and of the referendum.	"That we commend to the thoughtful consideration of the people and the reform press the legislative system known as the initiative and referendum."

The fourteen demands of socialism have been selected with care and with the desire to secure a representative list of the various principles and tenets set forth by them. They are taken from the planks of the various socialistic parties and truly reflect the opinions of socialism. In comparing the planks of the People's Party platform, we find that nine of them correspond closely to those of the socialists. Such a similarity is not an accident, but the result of thought along the same lines. The People's Party could not have adopted a platform in so many ways akin to that of the socialists if there had not been a previous tendency in that direction. It is true that the great fundamental principles of common ownership and equality of income are not expressed, nor is the last even hinted; yet the national ownership of the railroad and telegraph, coupled with a demand for increased State action, can only characterize the platform as socialistic in its tendency.

AN ANALYSIS OF AGRICULTURAL DISCONTENT IN THE UNITED STATES

By C. F. Emerick

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[Many footnotes are omitted from this reprint. The reader is referred to the original article. — Ed.]

INTRODUCTION

THE closing years of the nineteenth century are witnessing the unusual spectacle of restless discontent on the part of the tiller of the soil. Nearly every civilized country has its agrarian problem in one form or another. In England few expressions are more familiar than that of agricultural oppression. Germany has a storm center of agrarian difficulties. Even the peasants of France, concerning whose social contentment and conservative influence in political affairs so much has been said, have in recent years become aroused, and clamor for activity in behalf of their interests on the part of the government. A similar state of affairs appears to exist among the farming classes of the other nations of Europe. A writer in an English periodical in 1893 thus sums up the situation:

> Almost everywhere, certainly in England, France, Germany, Italy, Scandinavia and the United States, the agriculturists, formerly so instinctively conservative, are becoming fiercely discontented, declare they have gained less by civilization than the rest of the community, and are looking about for remedies of a drastic nature. In England they are hoping for aid from councils of all kinds; in France they have put on protective duties which have been increased in vain twice over; in Germany they put on the relaxed similar duties, and are screaming for them again; in Scandinavia — Denmark more particularly — they limit the aggregation of land; and in the United States they create organizations like the Grangers, the Farmers' League, and the Populists.

It has become customary to speak of the rural population as a counterpoise in political affairs to the artisans of the cities. Until

recently the practical politician expected comparatively little shifting in the political allegiance of his rural constituents : the voters in cities were the uncertain element in his game. The isolation of the agriculturists renders it difficult for them to be suddenly moved by a common impulse, such as is necessary to break party ties and cause a cleavage from traditional political connections. A property interest in the soil, such as is secured by the general prevalence of land ownership or an equitable system of tenantry, is also a most influential factor in rendering the farmer instinctively cautious and conservative. In the vigorous language of an English writer : " Peasant proprietorship is the one great force in a democratic country which opposes most strongly the doctrines of plunder and confiscation." In view, therefore, of the traditional habit of mind of rural populations, their present condition of unrest in nearly every civilized land is most extraordinary. During the past few years this condition in the United States has produced a political party which, gaining rapidly in power, disrupting the political associations of a lifetime and disappointing the calculations of the most astute politicians, has captured the electoral vote of several states and placed a number of its representatives in each house of Congress.

Such considerations — the prevalence of agrarian problems throughout the civilized world, their unexpected character, and the precipitation of the disturbed state of the agricultural mind in the United States into a formidable political organization — cannot but enlist the interest of the student of economic and social relations. In a country like our own, endowed by nature with such lavish abundance and fertility of soil, discontent among the agricultural classes is an unusually fascinating subject for study. It is the purpose of this essay to analyze this discontent with the object of determining to what extent it rests upon economic grievances, how far its explanation is found in a growth of social wants, to what degree it can be attributed to the nature of the farmer's business, and how much it has been intensified in recent years by special conditions.

For the purpose of determining the economic condition of the American farmer, I shall consider in the present study the relative

increase of rural and urban populations, the relative increase of rural and urban wealth, and the relation of agriculture to transportation. A second study will be occupied with the increase of farm mortgages and farm tenants, and the remedies proposed in the interest of the farmer. A third or concluding study will consider to what extent social influences, the nature of the farmer's business, and special causes, in addition to economic conditions, have promoted the discontent of the American farmer.

I. THE SIGNIFICANCE OF THE RELATIVE INCREASE OF RURAL AND URBAN POPULATIONS

No fact of our time is more noteworthy than the rapid multiplication and concentration of population in cities. The census of 1790 showed that in the United States 3.35 per cent of the population lived in cities of 8000 or over, while in 1880 the percentage was 22.57, and in 1890 it had risen to 29.2. From 1880 to 1890, while the whole population gained 24.86 per cent, that of cities increased 61 per cent, and the farming population 15 per cent. Of every 100 increase of population during the same decade only an average of 33 made their homes in the country and in villages of less than 1000 inhabitants; the other 67 resided in centers of population of 1000 or over. Thus, during the first century of our national life, the proportion of the population subject to the conditions of urban life increased from one-thirtieth to almost one-third.

Such facts are pointed to by some as evidence that American agriculture is unprofitable and in process of decline. That such a conclusion is necessary, however, does not follow. In every progressive society where the forces of nature have been substituted for those of man, a similar movement of population is taking place. A distinguished writer has said: "The nineteenth century is closing upon a race that is destined, for the great majority, to live in cities, or under conditions more or less strictly urban." In no country have city populations made more phenomenal gains within recent years than in Germany. Berlin, for example, was in 1894 three times as large as in 1860; and although behind New

York City in 1870, it now leads that city in population. During the past twenty years it has added twice as much to its population as Philadelphia and as many actual new residents as Chicago. Hamburg has added more to its population since 1875 than Boston or Baltimore; Leipzig more than St. Louis; Munich more than Cincinnati. Scarcely less remarkable is the recent growth of urban populations in France, Holland, Belgium, Italy, Scotland, and England. In fact, it appears that there is not a single instance of the rapid expansion of city populations in the United States that cannot be duplicated in Great Britain or on the Continent.

There can be no doubt that increased efficiency of agriculture throughout a large part of the world has been the fundamental condition of this growth of cities. "When Malthus wrote, the labor of a person sufficed to raise food for 10 persons: at present in the United States a male adult can raise food for 120 persons." Better methods of husbandry, the use of superior implements, specialization of agricultural production and vastly improved transportation facilities, whereby large areas of new lands have been brought under cultivation, have been indispensable to this increase in productive efficiency, in consequence of which a relatively smaller part of the world's population is required to produce the food supply. "In each succeeding decade since 1850 there has been in all countries a marked tendency of rural population to emigrate to the towns; and although the rural ratio of inhabitants has seriously diminished, there has been an increase of tillage in consequence of machinery displacing labor." Although the ratio of rural population has declined in both Europe and America, while the total population has increased but 34 per cent, the area under tillage has risen 55 per cent.

Moreover, the agriculture of those countries having the smallest urban population is generally in a most unproductive condition. "All nations in which more than half the laborers are in agriculture are comparatively poor, and their rural processes are primitive, their implements rude, their rate of production low." In India, for example, eighty per cent of the whole population is closely connected with the land, and yet agriculture is there conducted so ineffectively that the masses of the people never know

what it is to have enough of even the bare necessities of life, and the yearly income of each member of the nation is but two pounds, while in England it is thirty-three. Again, when serfdom was abolished in Prussia in 1807, the agriculture of the country was so inefficient that seven-eighths of the people thus engaged were able to produce only a very inadequate food supply. "By the year 1867 the agricultural population . . . had fallen to forty-eight per cent; and thirty-nine persons more than in 1816, out of every one hundred, were thus set free from the fields to take part in those industries which contribute to clothe and shelter a population or minister to its higher wants." Yet the allowance of food that fell to each was not only one-third greater in quantity, but better in quality than in the wretched days of serfdom. It is well known, also, that in the days of slavery in the South a very small portion of the people were subject to the conditions of city life. The industrial organization which rested upon slavery made the factory system impossible, and agriculture was inefficient, slovenly, and wasteful in the extreme. One qualified to speak has said:

> Main strength, human muscle, unassisted by intelligent skill, was slavery's method of labor. With a capital of about sixty dollars in the shape of a good-natured old ox, attached to the end of a stout rope, New Bedford, Massachusetts, did the work of ten or twelve thousand dollars, represented in the bones and muscles of slaves, and did it far better. In a word, I found everything managed with a more scrupulous regard to economy, both of men and things, time and strength, than in the country from which I had come.

Further, "prices of grain, meat, etc., are invariably lower in countries where the bulk of the people are engaged in agriculture than in those which are given chiefly to manufactures. On the other hand, all manufactured products are cheaper in countries where agriculture is of little importance." From the point of view of civilization, also, those nations having the smallest percentage of city dwellers can hardly be classed in the first rank. Compare Russia, for example, with England, or Turkey with the United States.

The conclusion to be drawn from these facts is clear. The inference that the growth of cities in the United States is conclusive evidence of a less profitable condition of agriculture than formerly existed, or that it points to the economic decline of the

American farmer, is unwarranted. Whatever may be the condition of agriculture, the relatively greater increase of urban than of rural population cannot be assigned as decisive proof that it is in process of economic decline.

II. AN EXPLANATION OF THE RELATIVE INCREASE OF RURAL AND URBAN WEALTH

The wonderful rapidity with which wealth has been produced and accumulated in the United States has attracted the attention of publicists and economists of nearly every land. Notwithstanding the appalling loss inflicted by the Civil War, and in spite of the periodical occurrence of panics and commercial depressions, the nation has gone forward in the conquest of wealth with unprecedented and almost incredible celerity. The following figures are sufficient testimony to the correctness of this statement:

	Wealth of the United States	Dollars per Inhabitant
1860	$16,160,000,000	$514
1880	43,642,000,000	870
1890	65,037,000,000	1036

So readily have material things been brought into existence and with such facility are they fashioned to suit the most fastidious of tastes that questions of production are no longer the burning issues of the hour. The machinery of production has been so far perfected that there is no longer any fear of its inadequacy to satisfy the needs of all. The questions that have come to concern nineteenth-century society relate rather to distribution than to production. Let us therefore inquire as to the distribution of the wealth which the above figures exhibit. The table on the next page classifies the wealth between the two great groups of American producers. The figures indicate that during the last forty years rural wealth has quadrupled, while that of the cities has increased sixteenfold. The prevalent opinion, therefore, that the cities are outstripping the rural districts in the accumulation of wealth appears to rest upon a solid foundation of fact.

	Urban Wealth	Rural Wealth	Percentage of Urban	Total Rural
			Per cent	*Per cent*
1850	$3,169,000,000	$3,967,000,000	44	56
1860	8,180,000,000	7,980,000,000	51	49
1870	15,155,000,000	8,900,000,000	63	37
1880	31,538,000,000	12,104,000,000	72	28
1890	49,055,000,000	15,982,000,000	75	25

What is to be said in explanation of the relatively greater progress of the cities in wealth? Has it been achieved by depriving the farmer of a portion of his earnings? In reply to these questions, it is to be observed that the unparalleled accumulation of wealth that has marked the career of the United States has for the most part taken place since the introduction of steam as a motive power, and that prior thereto the disproportionate distribution of wealth between city and country did not exist. The following table shows the increase of steam power in the United States since 1840:

HORSE POWER OF STEAM IN THE UNITED STATES

	1840	1860	1880	1895
Fixed	360,000	800,000	2,186,000	3,940,000
Locomotives	200,000	1,800,000	3,700,000	10,800,000
Steamboats	200,000	900,000	1,200,000	2,200,000
Total	760,000	3,500,000	9,086,000	16,940,000

This table should be compared with the one given above showing the distribution of wealth. Such a comparison renders it unnecessary to argue that the swiftness with which wealth has been produced and accumulated in the United States would have been impossible in the absence of steam. In illustration of the efficiency of steam as a wealth-producer in the industrial world a single comparison will suffice. It is estimated that by converting the energy stored up in coal into steam the productive efficiency of labor is multiplied six hundred times.

But why is it that in the distribution of the wealth that has thus been created the cities have absorbed such a disproportionate amount? An answer to this question will involve an analysis of the tendencies of steam as a wealth-producer. In this way we may hope to understand also whether the cities have prospered at the expense of the farmer, or whether their progress is due to the operation of normal economic law.

1. Steam as a motive power in the operations of the farm has never admitted of direct practical application to any considerable extent. Except in the work of threshing, it has been exploited to only a slight degree in farm economy. Consequently, the volume of farm produce has not been greatly increased or its cost of production very much cheapened through the influence of steam-driven machinery. Indirectly, however, the use of steam in transportation and in the manufacture of farm implements has affected agriculture in both these respects, and in numerous others so important as to call for separate treatment in the following section of this study.

2. It is in pursuits other than those of the farm that we must look for the whereabouts of the 16,940,000 horse power of steam which the table given above shows to have existed in the United States in 1895. The process by which such an enormous amount of power has been absorbed in the industries of modern life is a matter of no little interest. In this connection, it is pertinent to observe that the utilization of steam made the era of invention a necessity. Its employment as a motive power stimulated the inventive ingenuity of man. As a consequence, numerous ingenious contrivances have been put to work, propelled by an invisible force, so cheapening production that commodities once luxuries for the rich have come to be almost necessaries of life to the masses of the people. Consumption has thus been so enormously increased that employments once offering work to only a few now demand hosts of toilers. Compare, for example, the business of transportation before and since the time of the railway. Steam power, steel rails, and other inventions have rendered the swift and certain movement of persons and commodities one of the daily necessities of the multitude. Since

1870, $1,000,000 a day have been spent in railway construction giving employment to labor; and now in the United States an army of nearly a million men are employed, directly and indirectly, in transportation. Again, when Arkwright invented his cotton-spinning machinery in 1760, there were 5200 spinners and 2700 weavers, or 7900 in all; while in 1887 there were 320,000, an increase of over 4000 per cent. In 1833 the number employed at spinning, weaving, and calico-printing was 800,000 and in 1887, 2,500,000. Notwithstanding the displacement of labor by machinery, the increased demand, owing to reduction in the price and improvement in the quality of the articles manufactured under new conditions, has operated not only to prevent any material reduction in the rates of wages or in the number of employees, but even largely to increase both. It is obvious that the industrial opportunities thus thrown open have mainly been such as to stimulate immensely the creation of those new forms of wealth which go to swell the sum total of values in cities.

Intimately connected with these facts is the difference in the nature of the human wants which the industries of the farm and of the city supply. Those met by the former are mainly physical, while those supplied by the latter are social.

"Physical wants . . . cannot be increased in each individual to any considerable extent. The stomach of the savage will consume as much as that of the civilized man; hence the effectual demand, through this class of wants, can only increase in about the same ratio as population. . . . Social wants are essentially different in all of their characteristics. They are the result of social, rather than cosmic, influences. They can be increased indefinitely in each individual, and can consequently be multiplied much faster than the population."

The influence of labor-saving contrivances in agriculture has consequently tended to eliminate the man from the farm. Mr. E. V. Smalley states that "the farmer of our day, with the help of machinery, exerts a productive force equal to that of three men in the days of his grandfather"; and Mr. Atkinson has estimated that, by the aid of improved means of transportation and specialization of industry, the labor of one man on the

plains of Dakota is sufficient to furnish one hundred and forty in Boston with bread. Not thus, however, with social wants; they are unlimited and tend to multiply faster than population. Consequently, in satisfying such wants, it is economically possible to substitute machinery or natural forces for man in increasing the volume and cheapening the cost of the needed commodities. The labor thereby set free is again absorbed, either in meeting the greatly increased consumption brought about by cheaper production, or in satisfying other social wants which it is the nature of a progressive society to evolve.

Owing to such facts, although the number of persons ten years of age or over employed at farming declined from 20.78 per cent of the population in 1870 to 17.48 per cent in 1890, the number of persons employed in all remunerative employments advanced from 32.43 per cent to 34.68 per cent; the number engaged in manufacturing and mechanical industries increased from 8.28 per cent in 1860 to 10.74 per cent in 1890; and those engaged in trade, transportation, domestic service, and professional employments increased in the same period from 13.7 per cent to 19.74 per cent.

The following table reflects the more rapid production of urban than of rural wealth:

Year		Capital Employed	Number of Workers	Net Value of Product	Per Capita Product
1870	Agriculture	$8,899,966,998	5,922,741	$1,958,030,927	$333
	Manufacturing	1,694,567,015	2,053,996	$1,743,898,200	680
	Mining	222,384,854	154,328	138,323,303	717
1880	Agriculture	12,104,001,538	7,670,493	2,212,540,927	288
	Manufacturing	2,790,272,606	2,732,625	1,972,755,642	722
	Mining		286,806	194,969,849	683
1890	Agriculture	15,982,267,689	8,466,363	2,460,107,454	290
	Manufacturing	6,525,156,486	4,712,622	4,210,393,207	893
	Mining	1,340,000,000	636,419	471,356,527	740

These figures tell their own story. With less than half the capital employed in agriculture, manufactures and mining have since 1870 annually created a per capita product two to three

times as great. The adaptability of steam to non-agricultural industries and the nature of human wants are factors of paramount importance in creating this disparity in the production of agricultural and non-agricultural wealth.

3. Another explanation of the concentrating tendency of steam is found in the fact that steam power cannot be economically transmitted long distances. This has necessitated the erection of large factories close by the power-generating plant rather than the distribution of a number of small establishments at considerable distances apart.

4. Apart from the nature of steam, the factory system of industry, as it exists today, is most favorable to economy of production for reasons peculiar to itself. To carry out the principle of the division of labor to the fullest extent, it is necessary that large numbers of men be assembled for work under one management in the same building. Further, in any industry requiring a large amount of machinery, the cost of protecting the machinery is less when it is concentrated under a single roof. It is evident, therefore, that the economy of production secured by the factory system inevitably tends to create urban wealth and to commit workmen to the socializing influences of city life. There has consequently resulted a "limitation in the variety of work carried on in . . . rural establishments. Of old, nearly all the articles which entered into the family life of an agriculturist were made in the household. Cloth of various kinds, candles, soap, the greater part of the tools, even the worked timber used in the edifices, were of domestic manufacture. This is no longer the case in those parts of the country which have been subjected to modernizing influences. The ever-progressive division of labor and the rapid extension of commerce made possible by improvements in the methods of transportation have led to the removal of many industries from the farm to the factory, where, by the use of machinery and trained labor, many articles can be made more cheaply and perfectly than under the domestic roof."

5. As the almost indispensable motive power in transportation, steam has promoted still further the aggregation of wealth in cities. Reference is not here made to the effect of arbitrary and

unjust discriminations practiced by railway corporations. The influence to which attention is directed arises from the very nature of transportation — from the fact that interruptions in the transport of commodities are unavoidable, and that, wherever they occur, wealth and population tend to collect. Interruptions in transportation have been classified as mechanical and commercial. The former necessitates the transfer of passengers and the rehandling of commodities, while the latter involves in addition a change in the ownership of property. Both classes of interruptions, but especially the latter, concentrate population and tend to the aggregation of wealth. The vastness of the territory of the United States, resulting in the need of distributing centers, has given rise to numerous commercial breaks; and their influence in promoting the wealth of cities cannot be doubted. Moreover, three-fourths of the steam power of the United States is engaged in water and land carriage; and the volume of the latter alone is twice that of all the rest of the world, so that any interruption in its movement becomes extremely influential and worthy of consideration. But the application of steam to transportation has been influential in still other ways in promoting the prosperity and piling up the wealth of cities. This is well illustrated in its effect upon the relation of the inland town to the commercial metropolis. When men reached the interior by horse power, by the ox team or on foot, the rural town had a living chance to advance in wealth and population. For the industrial army which had moved into the wilderness or the open country, the rural village was the new base of supplies. The commissariat must go along with the columns. The large center was too far away. But the coming of the railway bridged the distance. It brought the village ten or twenty miles away in touch with the great city, making it a sort of suburb. The outlying depot of supplies is no longer needed; the railway train has taken the place of the country storehouse.

6. Industries monopolistic in character, such as trusts, and especially street railways, waterworks, gas and electric-light plants, which become increasingly valuable with growth of population and social development, are for the most part located in cities,

and are important factors in swelling the sum total of urban wealth. On the other hand, the business of the agriculturist is not capable of monopoly control. The great number and the isolation of agricultural producers render practically impossible pools designed to control the output of food products. Moreover, agriculture is so largely dependent upon cosmic forces, over which man exercises little or no control, that even were a combination of agriculturists successfully organized, it would be impossible for it to regulate the volume of food products and thereby control prices. Such considerations throw still further light upon the more rapid accumulation of urban than of rural wealth.

7. The fact that special knowledge or skill is not indispensable in the performance of many operations upon the farm is also deserving of attention. It is not intended to say that the labors of the skilled, intelligent, and energetic agriculturist are not more largely rewarded than those of the unskilled, ignorant, and slovenly cultivator; but that there are few occupations where mediocre ability and lack of thrift can manage to eke out an existence with as much certainty as upon the farm. A lack of ordinary enterprise and energy is in many other pursuits much sooner overtaken with disaster. In explanation of this it may be said that agriculture is often dependent quite as much upon favorable climatic conditions as upon the human element, while in some other lines of industrial activity the personal qualities of the worker are to a much greater degree determinant of success. Consequently, many inefficient and thriftless cultivators who could scarcely earn a livelihood at anything else are not speedily weeded out of the business, but continue to contribute to the abundance of the world's food supply. Partly owing to the competition of this class of farmers, and to the dependence of agriculture upon conditions which man is powerless to control, the better-directed labors of men possessing more than average skill and intelligence are less amply rewarded than those of men of the same ability in other walks of life. On the other hand, the occupations of city life afford industrial opportunity for the exercise of that administrative ability and technical skill which in modern society is most amply rewarded. The highly paid executive talent

required for the successful management of the corporations which control the great industrial enterprises of modern times finds the seat of its business activity within the confines of cities. Further, those engaged in professional pursuits who receive large rewards for their services, as well as the large and increasing class of skilled and well-paid mechanics found in every progressive society, live in the midst of city surroundings. Owing to the inertia of the agriculturist and his inability to adapt himself to many of the more highly paid positions of the city, the unequal rewards of urban and rural workers are not rapidly reduced to a level. That is, city and country form two distinct and non-competitive groups of industrial society. The foregoing suggestions still further explain the greater progress of the cities in the race for riches.

8. Our study has thus far been confined to the economic forces in modern society which have promoted the more rapid increase and accumulation of urban than of rural wealth. But the problem we are considering is not explainable on economic grounds alone. These are fundamental, for economy of production has made necessary concentration of wealth in cities, and this has made concentration of population indispensable to getting a living; but the social tendencies of our century have also been toward the densely populated centers. Cities, with their density of population and vast aggregation of values, are not only essential to economy of production, but are also able to command such superior and attractive social, educational, and religious advantages that many people of means move from the farm to the city. In the olden time, before the rise of the factory system, many who longed for social life had to endure the loneliness, dullness, and monotony flowing from the isolation of farm life. But the advent of the railroad and the rise of the modern system of industry provide for such an avenue of escape to the greater social opportunities of city life. All the advantages which man's social nature craves — the theater, the picture gallery, the public library, church privileges, the daily newspaper, intercourse with one's fellow men, the sight of the bustling crowd — in short, all that goes to make social opportunity, are to be had most readily near the great

industrial centers. Our educational systems and all the intellectual forces of our time stimulate a mental activity which seeks some professional pursuit in the midst of the bustle and whirl of the city; the road to political preferment and social distinction also leads from the quiet of the country home to the noisier scenes of the city; and the enviable success achieved by some who have left the country and gone to the town fires the social ambition and creates among those who have remained on the farm a feeling of unrest, which accelerates the movement of population to the busier fields of action. Finally, the inclination of the rising generation for city life is still further stimulated by a feeling more or less prevalent that the young woman who supplies city customers with butter, or the young man who soils his hands with the dirt of honest toil on the farm, is somehow socially inferior to the one who as a clerk in a city store sells goods over the counter. All of these social considerations have stimulated the flow of population from country to city, have given rise to urban residences, have furnished laborers for the industrial expansion of cities, and have contributed toward hastening their progress in wealth.

In the course of our study of the relative increase of rural and urban wealth we have arrived at the following conclusions:

a. While the increase of wealth in the United States has been phenomenal, its distribution is such that three-fourths of the aggregate amount is today found in cities.

b. This unequal distribution of wealth is, if we have been correct in our analysis, due chiefly to the new industrial organization introduced through the agency of steam power.

c. The wealth-concentrating influence of steam is due to the fact that it has admitted in only a limited degree of direct application to agricultural production, to the difference between man's physical and social wants, to the fact that steam power cannot be economically transmitted long distances, and to its use as an agent in transportation. Other influential factors in enriching the cities have been the economy of the factory system of production, the private ownership of monopolistic industries, the fact that successful crop production is determined quite as much by

climatic as by human influences, and the force of social considerations. So far as anything disclosed by our analysis is concerned, therefore, with the single exception of the private ownership of monopolies, there is no evidence that urban wealth has been accumulated at the expense of the farmer.

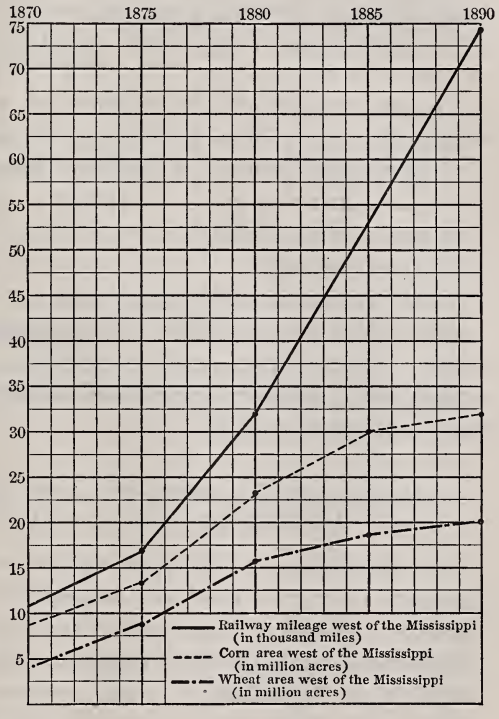
III. THE RELATION OF AGRICULTURE TO TRANSPORTATION

Influence of means of transportation upon the migration and the geographical concentration of agricultural production. Within the memory of many now living, the Genesee valley led the whole country in the production of wheat. At the present time, not only has the center of wheat production changed from New York to Minnesota and Dakota, but the milling industry has migrated from Rochester to Minneapolis.

Of the total wheat crop of 1839, 61.52 per cent was produced in four states, containing only 5.84 per cent of the entire surface of the country; fifty years later those states produced only 15.66 per cent of the total, and four others, containing 11.01 per cent of the total land surface, produced 35.85 per cent of the total crop. Of the total production of oats in 1839, 56.2 per cent was produced in four states containing 5.84 per cent of the entire land surface of the country. In 1889, 48.82 per cent was grown in four other states, containing 8.25 per cent of the total land surface.

The explanation of this wandering of agricultural enterprise and localization in new fields of production is to be found in the American railway system. The chart on the opposite page exhibits the relationship between the extension of railway mileage west of the Mississippi and the increase in the area devoted to the production of corn and wheat. Capacity, cheapness, speed, and independence of the natural features of the earth's surface have been the elements that have contributed to the efficiency of the American railway and have rendered the development of agricultural industry so dependent upon it. According to an English writer, J. Stephen Jeans, the American is superior to the English railway system in all these respects. In no particular,

however, do American railways make a better showing than in the matter of cheapness. The last report of the statistician to the Interstate Commerce Commission gives the following rates per ton-mile for several nations of the world: Great Britain, 3.2 cents, France, 2.2 cents, Germany, 1.64 cents, United States, .866 cents. The fact that at the average rate of 1882 the railway freight traffic of the United States for the twelve years ending June 30, 1894, would have yielded the railway companies $2,629,043,459 more than they received at the rates charged, gives one some conception of the extent to which railway freight rates have been reduced.



In bringing about this reduction several forces have been prominent:

1. Greater economy in the cost of railway construction and operation. The use of steel rails, the enlarged capacity of cars, the increase in their live weight, the straightening of curves, the leveling of grades, the improvements in traction power, the reduced cost of railway supplies, the lengthening of the long haul and, perhaps fully as much as anything else, the consolidation of railway lines have been influential factors in this matter.

2. A great increase in the volume of the traffic. In 1870 the states west of the Mississippi consumed nearly all of their products

at home; but now Nebraska alone, after supplying her home market, sends east "450 cars of bread and meat products every day in the year." "Every additional carload of east-bound product from the Missouri River lessens the cost of every other carload," and, consequently, compared with twenty-five years ago, "nearly three-fourths of the cost of transportation from the Missouri River to New York has been stricken off, and Nebraska is over one thousand miles nearer the Atlantic seaboard."

* * * * * * * * * *

In our analysis of the relation of agriculture to means of transportation we have arrived at the following conclusions:

1. The development of modern transportation facilities has been the prime agency in causing a migration of agricultural industry, and in tending to concentrate it geographically in new fields of production.

2. The American railway system has been the indispensable condition for the settlement and development of the greater part of the United States, and its extension throughout the Central and Western states has contributed towards increasing marvelously their agricultural wealth.

IV. THE SIGNIFICANCE OF THE INCREASE OF FARM MORTGAGES AND OF FARM TENANTS

As introductory to this part of our study stands the fact that between 1880 and 1890 the amount of mortgage indebtedness upon acre tracts, in distinction from city lots, increased 71 per cent, or two and one-third times as fast as agricultural wealth. What is the significance of this enormous increase? Is it consistent with permanent economic and social progress? A satisfactory answer to these questions involves an analysis of the increase, and of the burden of mortgage indebtedness.

The increase of mortgage indebtedness. It must first be noted, in connection with this topic, that 83 per cent of the growing volume of mortgage debt, 1880–1890, was incurred to enable debtors to buy lands, erect buildings, and make other improvements, and that more than 94 per cent of it represents durable property. The object for which this increasing indebtedness was

incurred indicates that it was voluntarily assumed — that, in the judgment of those who subjected themselves to its burden, there was reasonable ground to expect success to attend their venture. The owners of capital who made the loans were evidently of the same opinion. Professor Gunton has rightly said :

> Debts, it is true, are often contracted to relieve personal distress, or to prevent a great loss of capital. . . . But this is not the chief function of debts. It occupies about the same relation to borrowing, as a whole, that auction sales do to the traffic of the merchants.

At the same time, the fact that the employment of credit is increasingly necessary on the part of those who are struggling for industrial independence, is indicative of an inequality in the distribution of wealth.

The psychological conditions that have promoted the vast extension in the use of credit in general have played a part in the increase of mortgage debt. Of chief importance here is the tendency of the American people to discount the future in their calculations and undertakings. Past experience shows such phenomenal social and material prosperity that it is natural for them to be animated with a spirit of hopefulness. As a consequence, debts are incurred, risks are assumed, and enterprises started with a courage born of confidence in the future. It is probable that this spirit of unexampled and undoubted faith in the industrial future of the country is largely responsible for the startling growth of mortgage indebtedness.

That such a spirit stimulates borrowing is a truism. During every panic and period of commercial depression mortgage debts are contracted with reluctance, while during times of business revival and prosperity they are incurred as a matter of course. When the atmosphere is filled with hope, when confidence is unbounded, when there is not a threatening cloud above the industrial horizon — then it is that men of enterprise willingly assume the obligations of mortgage debt, and that capital most cordially welcomes the borrower. In accordance with this theory, we should expect a large amount of mortgage indebtedness in countries where the future is brightest, where industrial development is yet in its youth, and where there are many in the prime of

life, full of expectancy, industrious and aspiring to build homes. On the contrary, where nature has been most miserly in bestowing her riches, where social and political conditions are unsettled, and where there is a population whose lives have been full of disappointment and who are by nature pessimistic — there we should expect to find a small amount of mortgage indebtedness.

It is generally conceded, for example, that our Southern States have lacked industrial enterprise. Consequently, we find that of the families occupying and owning farms in Kentucky but 4 per cent have encumbered properties; in Georgia, Florida, and Tennessee, 3 per cent; and in North Carolina, 5 per cent. Turning to some of the Northern states, we find the following percentages: Ohio, 29 per cent; Indiana, 33 per cent; Michigan, 49 per cent; and New York, 44 per cent. Likewise, it is generally recognized that during the decade covered by the last census, there was unusual enterprise and industrial activity in the Southern States, owing to the ingress of Northern energy and capital; yet it was during that period that the increase of debt was 110 per cent in North Carolina, 313 per cent in Tennessee, 262 per cent in Georgia, and 559 per cent in Florida.

Again, during the ten years ending with 1889, mortgage indebtedness increased much faster in the cities than in the country; for the former the total was 217 per cent greater in 1889 than in 1880, while for the latter it was but 71 per cent greater. Yet during this period the cities offered larger industrial opportunities than the country, thousands of laborers acquired homes, building and loan associations multiplied and flourished, and urban wealth most rapidly increased.

That mortgage indebtedness has also greatly increased in the Western states is a fact known to all. In Kansas 60 per cent of the taxed acres are under mortgage; in Iowa, 47 per cent; in Nebraska, 55 per cent; in Missouri, 25 per cent. But wealth and social well-being have also multiplied. Probably no farming country in the world ever increased in wealth at an equal rate, or in so short a time attained those conditions that render life attractive and that minister to the intellectual, social, and religious wants of man.

This line of thought has been forcibly summarized in the following language:

> The important truth concerning debts is, that the poorer and more purely agricultural portions of the country are not those where mortgage indebtedness on farms and homes is the greatest. Debts abound where there is wealth and industrial opportunity, and because there is industrial opportunity. New York State with 6,000,000 inhabitants, Pennsylvania with 5,000,000 and Illinois with 4,000,000 have each of them a larger mortgage indebtedness than all the Southern States taken together, with a population of 22,000,000 and over. The six states in which the indebtedness is above $100,000,000 contain only a third of the people of the United States, but their people have borrowed more than half the total amount loaned on mortgages.

This same explanation of the increase of mortgage debt is set forth by the commissioner of labor of Minnesota:

> The years 1869, 1870, and 1871 witnessed a great increase of mortgages placed on record against acre property. These were years of great farm prosperity, and lands were mortgaged to secure money to improve the same. . . . Farm disasters always lead to decreased mortgages on farm lands. . . . The wheat crop of 1877 was equal to that of 1875 in the state, although an almost total failure in certain counties. In the counties with a failure the growth of mortgage debt was checked, but the good prices for wheat and the constantly increasing wheat production of Minnesota led to a great increase in mortgage debt in the state as a whole. . . . Years of disaster in any given county are followed by decreased relative amounts of mortgages, showing that farm mortgages in Minnesota are the results or accompaniments of prosperity and not of disaster.

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The further question, whether the income of farm land now subject to mortgage has been maintained at the point which the borrower expected, is obviously of paramount importance. The proximate causes of any decline of farm income, other things being equal, are lower prices for agricultural produce and crop failure.

In regard to prices, it is noteworthy that many of the products of the farm have in recent years most seriously declined. For example, the average farm price of wheat during the four years, 1888–1891, was 82 cents per bushel; while during the following four years, 1892–1895, the price averaged but 55 cents, a decline of 33 per cent. That is, to pay off a debt of $1000 during the latter period would have required on the average about 600 bushels more of wheat than during the former. The average

aggregate farm value of the wheat crops during each of the four years of the first period was $393,000,000, while for each year of the latter period it was $249,000,000, a falling off of 36 per cent. In 1895 nearly twice as many horses were required to pay interest or to discharge the principal of a debt as in 1891. Moreover, the average price of middling cotton during the four years 1892–1895 was 26 per cent less than during the preceding decade. The price of sheep and wool averaged fully 30 per cent less during 1894–1895 than during the ten years preceding. Barley sold on the average for 20 per cent less during 1893–1895 than during 1883–1892. The prices of corn, potatoes, and oats during 1895 were less than their average for the decade 1885–1894. Of the principal farm products, cattle, hay, and hogs were noteworthy exceptions, averaging higher in price during 1892–1895 than for a decade. The year 1896 (now three-fourths gone) promises a level of prices for farm products considerably lower than 1895.

This decline in the prices of farm products has not been offset by any corresponding decrease in the cost of production. The four years 1892–1895 were not marked by any revolution in agricultural methods. There were few farm implements employed in 1895 that were not generally in use in 1891; and even if their price during these four years underwent considerable reduction, the interval was too brief for implements already in use to be replaced to such advantage as to lessen materially the cost of production. East-bound freight rates between leading points did not appreciably decline. The cost of farm labor also diminished but slightly. Taxes for state purposes were steadily maintained, tending to increase rather than to diminish. It follows, consequently, that this fall in the prices of farm products has tightened the grip of mortgage debt upon the American farmer.

Even more destructive than falling prices to the labors of the energetic and aspiring husbandman is crop failure. This fact is best illustrated by conditions in portions of the Dakotas, Nebraska, Kansas, Oklahoma, the Indian Territory, and Texas. In parts of Kansas and Nebraska agriculture has been in a marked degree subject to all the uncertainties of a capricious climate. As you

cross the plains the rainfall steadily decreases, "but no stakes can be set to warn the settler that thus far shall he go and no farther. . . . Some of the counties in Kansas lying within this belt have been populated and depopulated, in a measure, two or three times. One or two years of exceptional rainfall bring in a fresh throng of settlers to take the place of others who have given up the struggle; they in turn are impoverished by the dry years that are sure to follow, and abandon their farms."

Concerning crop failure in recent years in Kansas, Governor Morrill of that state says:

I think it probably true that land in some parts of our state has declined in value fifteen per cent since 1884. The western part of the state is subject to droughts. The rainfall there in nearly all seasons is below what is required to make a good crop. I know there was a great rush of people to that section of the country to take homesteads, and for a time land sold very readily. The failure of crops for the past three years has caused a stampede from that section, and land is difficult to sell now at any price.

The disaster thus entailed upon the agricultural interests of the drought-stricken portion of the state is reflected in a decrease of population.

In 1890 Kansas had 1,427,096 people. In 1895 the state census found only 1,334,668 within her borders. The counties in the eastern part of the state, which enjoy a sufficient rainfall for agriculture, exhibited gains, but in the western-central and western counties there was an absolute loss of about 200,000,—a greater number than is contained in the entire state of North Dakota. . . . The causes which produced the partial depopulation of the western part of Kansas were equally operative in western Nebraska (and in North and South Dakota).

The economic history of wheat production in Minnesota is also full of examples illustrating how crop failures act as income-destroyers, and as promoters of the burden of mortgage indebtedness.

All classes of farmers, however, are not equally injured by such unanticipated occurrences. The differences have been clearly indicated by the labor commissioner of Minnesota.

In an old and well-settled and prosperous farming community these disasters or misfortunes in modern times bring with them no dire results. The average farmer has sufficient wealth of his own, available resources of various

kinds, or the facilities for credit to carry himself and family through the evil days and into the ever-returning periods of good crops, fair prices, and returning prosperity. This is not the case with new farmers with small resources in a new country. . . . They cannot command sufficient credit to carry them to the better times, and their farms are sold by mortgage foreclosure. (Consequently) in a new country . . . farm failures become very numerous after every general loss of crops due to any cause and also after every period of depreciated prices for farm products.

With this view of the conditions under which the loans were secured, let us turn to a study of mortgage foreclosures and the liquidation of mortgage debts.

Probably there are no more accurate measures of the burden of mortgage indebtedness than the relative frequency of foreclosures and the progress made in the liquidation of the debts. The data at hand permit the consideration of mortgage foreclosures in New Jersey, Illinois, and Minnesota, the liquidation of farm mortgages in Michigan, and the relative rates at which mortgage debts upon acre tracts and city lots were liquidated during the ten years ending with 1889 throughout the various states of the Union.

It is the general impression that the number of failures is relatively less in farming than in other gainful pursuits. In New Jersey, however, for almost a decade the average yearly number of foreclosure executions upon farms somewhat exceeded the number of mercantile failures in that state reported by Bradstreet's. The reluctance with which capital is advanced upon farm lands also indicates the unfavorable agricultural conditions existing in New Jersey. It is, moreover, reasonable to suppose that all of the states whose farm lands declined in value have suffered some of the disadvantages of mortgage debt that are illustrated by New Jersey. It is of interest to note that in nearly all such states the number of mortgages given yearly throughout the last decade, upon lands used for farm purposes, did not increase, and in some instances actually decreased. In a considerable number of them, when due allowance is made for the number of acre tracts subject to mortgage and held for speculative purposes within city limits, there was a noticeable decrease in the mortgage indebtedness incurred upon lands used for farm

purposes. This fact of itself probably indicates that the chances of agricultural success, in states whose lands have declined in value, have been such as to give little encouragement either to the borrower or to the lender of money upon farm lands. In Illinois, in 1886 and 1888, the rate of mortgage foreclosures upon lots was somewhat less than upon acres.

In Minnesota, owing mainly to the introduction of diversified farming, the farmer was better off in respect to foreclosures during 1892–1893 than at any previous time in the history of the state. Moreover, in 1893 the rate of mortgage foreclosure upon acre property used for farm purposes was less than upon city lots or acre tracts held for speculative purposes in the vicinity of cities. To what extent Minnesota, in regard to mortgage foreclosures, is representative of other trans-Mississippi states whose lands are rising in value, it is impossible to say with any great certainty. In states like Iowa and Missouri, where both soil and climate are well adapted to agriculture, where the farm population is possessed of considerable accumulated resources and credit, and where a fairly well-diversified system of crop production exists, it is fair to infer that mortgage foreclosures have not been unusually frequent. But in sections subject to prolonged and disastrous droughts and having inhabitants possessed of meager resources, such as western Kansas and Nebraska, mortgage foreclosures have beyond question registered a high degree of agricultural disaster in recent years.

Upon the liquidation of mortgage indebtedness in Michigan, the reports of the state bureau of labor for 1888 and 1893 throw some light. The report for the latter year showed a slight decrease in the percentage of farms and of acres mortgaged, in the amount of mortgage debt, and in the percentage of debt to the assessed value of farms encumbered, with a consequent falling off in the annual burden of interest of $471,581.

With regard to the relative rates at which the liquidation of mortgage debts upon acre tracts and city lots proceeded during the last decade, tables are submitted on the following page.

The figures indicate that the rate of mortgage liquidation upon acre tracts was 54.89 per cent, and upon lots 47.06 per

REAL-ESTATE MORTGAGES MADE IN UNITED STATES, 1880–1889

	Number	Amount
Total	9,517,000	$12,094,000,000
On acres	4,747,000	4,896,700,000
On lots	4,770,000	7,198,000,000

Real-Estate Mortgages in Force, January 1, 1890

	Number	Amount
Total	4,777,000	$6,019,000,000
On acres	2,303,000	2,209,000,000
On lots	2,474,000	3,810,000,000

Liquidation Effected, 1880–1889

Estimated mortgage debt, January 1, 1890	$2,494,000,000
Mortgages executed since	12,094,000,000
Total	$14,588,000,000
In force January 1, 1890	6,019,000,000
Amount Liquidated	$8,569,000,000

cent. The amount of mortgage debt resting upon acre tracts, however, gives one an exaggerated idea of the volume of debt carried by the farm lands of the nation. A considerable portion of such land is held for speculative purposes in the vicinity of cities, and cannot properly be considered as farm land in an investigation of the debt under which the agricultural interests of the country are laboring. Lands used for farm purposes and occupied by their owners were subject to an aggregate incumbrance, January 1, 1890, of $1,086,000,000. This debt rested upon 887,000 farm families, and represented 35.55 per cent of the value of the farm lands encumbered. There is, of course, some mortgage debt upon farms not occupied by their owners and leased to tenants. The volume of such debt, however, is believed to be inconsiderable; and the well-being of a class able to live upon the rental of the farms they own need not excite the serious concern of the public.

Again, it should be borne in mind that the mortgage debt in force, January 1, 1890, was distributed within each state largely according to industrial strength. In such states as Iowa, Kansas, and Nebraska, where agriculture is the principal industry, the greater part of the mortgage debt rests upon farm lands; in states having great manufacturing interests and large urban development, such as New York and Massachusetts, the debt upon homes is greatly in excess of that upon farms. Owned and encumbered farms, however, were less heavily mortgaged than owned and encumbered homes, the former being mortgaged for 35.55 per cent of their value and the latter for 39.77 per cent.

The increase of farm tenants. The last United States census showed a marked increase, not only absolutely but relatively, in the number of farm tenants. In 1880, 30.93 per cent of the farm families hired their farms; in 1890, 34.17 per cent. During that decennial period there was in Ohio, Indiana, and Illinois a loss of 22,300 owning farmers and a gain of 18,887 tenant farmers. In 47 states and territories the number of owning farmers increased 274,300, and the number of tenant farmers 349,100.

In order to explain the presence and increase of farm tenancy, and to ascertain whether landlord and tenant classes are in process of evolution in the United States, it is necessary to analyze several features of tenancy.

1. One factor of much influence in making the percentage of farm tenants in the United States so large is the industrial condition of the South. In the South Atlantic states 45 per cent, and in the South Central states 48 per cent, of the total number of farm families are tenants; while the percentage in the North Atlantic group is 21; in the Rocky Mountain and Pacific, 18; and in the North Central, 26. The existence of such a large class of tenant farmers in the Southern states cannot, however, in the light of industrial history be held to be an unfavorable symptom. Tenancy in these states simply marks the step from an industrial system based upon slavery to one of freedom.

2. Especially significant in connection with the increase from 1880 to 1890 in the percentage of farm tenants is the fact that

during those ten years 5,246,613 immigrants, or one-third of our total immigration from 1820 to 1890, came to our shores. The average per capita wealth which this great invading army of unskilled workers brought with them was considerably less than $100. Their meager resources rendered it inevitable that so far as they found a place as agriculturists in our industrial organism, they should appear as farm laborers and tenants rather than as farm owners. The natural increase of our native and foreign-born population, at the rate of between a million and a million and a half a year during the last decade, has also tended to swell the number of farm tenants. Instances are exceptional where parents with several children in the family are able to provide each with a farm. In large families some of those who elect farming as a pursuit must therefore start either as hired hands or as farm tenants. In connection with the increase of population, the exhaustion of the desirable portion of the public domain and the prosperity of farm owners are pertinent facts. When government land was more abundant, there was but one step from the condition of a hired laborer to farm ownership. Now it is necessary first to become a tenant; and but for the fact that some farm owners have prospered sufficiently to be able to rent their farms, hired laborers desirous of rising to tenancy would have no industrial opportunity.

3. The increase in the relative number of farm tenants in some states is the result of agricultural disaster. President Fairchild of Kansas Agricultural College writes me as follows:

> There is always a considerable body of young men who first rent farms and afterward come to own them. In this state, however, some peculiar conditions have increased quite beyond the normal the number of tenants. The whole western third of the state was settled by a boom in farm lands. Multitudes of settlers took claims without means of their own, expecting to pay for the land from the immediate profits of farming. Multitudes of them mortgaged the land for improvements, and multitudes more expended the proceeds of mortgages in living. When it was found that the proceeds of farming in that part of the state were very uncertain, at best, the mortgages became due. And in many instances those who had been nominally owners remained upon the farms as tenants after foreclosure. These are but the natural effects in reaction from a tremendous boom.
>
> Another reason for apparent increase of tenants is found in the general hesitation to accept mortgages following immediately after the panic; which

panic, you will remember, began in Kansas real estate long before it was felt in the general commercial world. Under ordinary circumstances a thrifty young man can buy a farm with a very small cash payment. For the past seven years, with property declining, neither the buyer nor the owner will take the risks of such a trade.

With these various influences working for the development of a tenant class, few questions are of greater interest to the student of social relations than the ultimate destiny of the increasing number of farm tenants. Are they doomed to remain always in a state of relative industrial dependence, or will economic conditions permit them to rise to a higher industrial level?

Two considerations indicate that it is possible for farm tenants to become landowners. In the first place, the resistance to be overcome in taking such a step is not very much greater than that encountered by the settlers who took up land on the public domain under the homestead laws. The necessary outlay of the early settler, in addition to the cost of transporting himself and his family to the West and of living during the year or perhaps two years which intervened before a regular crop could be raised, has been estimated at $1000. The same amount of money will enable its possessor at the present time to become the owner of a farm fairly well improved in either the eastern or the western division of the Central States. Such a farm owner would enjoy better markets, and would not have to endure the long years of isolation, involving social, educational, and religious deprivation, which it was the lot of the early settler to undergo. It is true, of course, that prices for the products of the farm have very much declined in recent years; but it is also true that farm land in many of the states referred to above can be had at prices 25 to 50 per cent lower than fifteen years ago.

In the second place, the percentage of farm tenants in the Northern states is frequently greatest where the soil is most fertile and the conditions most favorable to agricultural prosperity, and is often smallest where nature most scantily rewards the labors of the agriculturist. Thus, in Illinois 37 per cent of the farm families hire their farms; in Iowa, 29 per cent; and in Missouri, 31 per cent. In Massachusetts, however, but 15 per

cent of farm families are tenants; in Maine, 7 per cent; in Connecticut, 17 per cent; and in New Hampshire, 10 per cent. In the single state of Illinois there are nearly four times as many farm tenants as in all New England. In Minnesota the best and most prosperous counties show the largest actual and relative number of tenants. In the counties with the smallest ratio of mortgage foreclosures, the percentage of tenants is greatest; and relatively few tenants are found in counties where the ratio of mortgage foreclosures is large. Probably no one would deny that the conditions are more favorable to agricultural success in the North Central than in the North Atlantic states. Yet in ten years, 1880–1890, the number of farms cultivated by others than their owners increased 23 per cent in the former and but 9 per cent in the latter. During the same decade the net gain in the number of rented farms in the New England States was but 58, and in each of four of these states the number was less at the end than at the beginning of the period. The obvious explanation of this condition of affairs is that tenants naturally drift to the best farming sections, for it is in the best sections that farmers become prosperous enough to retire and lease their farms. The important fact to which attention is here directed is, then, that farm tenants are most numerous where the conditions are most favorable to their becoming farm owners.

Not only is it possible for tenants to rise to farm ownership, but there is positive evidence that this is just what is taking place at the present time. For example, in Minnesota one out of every nine farm tenants rises to ownership each year, and one out of every four of the most efficient. That is, of the 17,982 tenants in Minnesota, more than 2000 annually rise to ownership. Moreover, 94 per cent of those who have lost farms by mortgage foreclosures in that state have been able in a short time to regain their earlier condition as farm owners. In Minnesota, therefore, "The growth of tenancy . . . is part of a movement lifting a large number of people by slow and sure stages from small beginnings to independence on the farm." Upon this subject President Beardshear of Iowa Agricultural College writes me as follows:

I think there is quite a tendency among renters of Iowa farms to become owners of farms in the near future. Out of four renters under my supervision upon an Iowa farm in ten years, three of them became independent and purchased farms for themselves. Iowa Agricultural College has leased quite a number of thousands of acres of land in the last twenty years with condition that they could be purchased at a nominal sum at the expiration of a certain number of years. A vast majority of these renters have purchased the land at the expiration of the leases.

The success with which tenants struggle for farm ownership may be roughly measured by comparison with the success of heirs in retaining ownership. Nearly every country community is rich with examples of individuals who have lost the farms they inherited. In the farm community where the writer once lived and with which he has been familiar all his life, the farms which descended to heirs have in the great majority of cases for one cause or another been transferred to new owners. Often the explanation is found in thriftless or bad habits. Frequently, however, embarkation in some line of business other than farming is responsible. With the record of this class of owners the industrial career of farm tenants compares favorably. While the statement cannot be made upon statistical authority, the percentage of farm tenants who fail of property ownership is probably not much greater than the proportion of financial wrecks among those who inherit farms. If this be admitted, it follows that the farm tenant is relatively not unduly handicapped in the race of life.

In conclusion, the subject of farm tenancy suggests this line of thought:

One cause that promoted the downfall of the English yeomen was the fact that land was, more than any other form of property of the time, a source of income, as well as of power and influence, to its possessor. In marked contrast with that condition of affairs is the fact that in modern society farm lands have to a great extent been displaced by other means of securing income, power, and social prestige. "Investments in lands which are valuable for agriculture only, are not regarded with favor by capitalists. Better use for their money is found elsewhere.

"The banker, merchant, manufacturer, and capitalist have become wealthier than the landowner. The moneyed classes have

supplanted the landed classes in importance. The banker millionaire is greater and more powerful than the ducal landlord. Land, the old source of centralized wealth, inordinate power, caste privileges, and hereditary rights, no longer maintains its preëminent importance."

These facts, in connection with the question we are considering, are full of significance. Indicating an absence of adequate motive for the wealthy classes to seek landed investments, they show that one of the most potent influences in promoting the development of landlordism is absent in the United States.

Mr. George K. Holmes, one of the special agents in charge of the volume of the Eleventh Census on real-estate mortgages, in a personal letter of September 26, 1896, says:

> I have been unable to find in the observation and experience of hundreds of census agents, who did work in all parts of the United States in collecting statistics of mortgages, that capitalists are seeking investments in farms, except in so far as they lend money to farmers on farm-mortgage securities. These lenders do not want the farms.

It is true that there is a tendency among the fashionable and wealthy classes in the cities to desire land for summer residences. It is unlikely, however, that this movement will ever seriously encroach upon the cultivated lands of the United States. Not only are large estates seldom in demand for such purposes, but, in general, land occupied by the summer residences of the rich is in the neighborhood of the ocean, the mountains, or the Great Lakes, and is not suitable for agricultural purposes.

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V. FOUR REMEDIES FOR THE AGRICULTURAL DEPRESSION CONSIDERED

Before discussing several remedies proposed in the interest of the farmer, certain unfavorable conditions, which make it impossible to adjust supply to demand so as to render the business of the farmer continuously profitable, deserve consideration.

1. Foremost among these conditions is the vastly increased supply of farm products which, through the efficiency of modern

methods, are put upon the market. Among the factors chiefly instrumental in effecting this result are improvements in transportation and communication. By rendering the world's markets accessible to the products of the most remote corners of the earth, not only have they increased the forthcoming supply of such staples as breadstuffs and meats, but, by enlarging the variety of food products, they have contributed still further to the abundance of the food supply. Formerly, "the food supply came only from the neighborhood, and was diversified only by the seasons. Now it is replenished from every zone. . . . The grocery store of Chicago and that of New Orleans, the market-places of London and those of Calcutta might change places in a night, without revealing any striking novelty to their patrons the next morning." In the presence of a harvest all the while ripening somewhere round the globe, a large surplus or a crop of unusual size in any country exerts a depressing influence upon the price level of the entire world.

Science and invention have also increased the food supply by utilizing what were formerly waste products. For example:

Within a few years the city of Chicago produced more tons of artificial butter than any state of the Union could show of the genuine article. Filled cheese has destroyed the foreign market, which was formerly so good, for the American dairy product, and so reduced the price of the unadulterated article as to make its manufacture quite unprofitable. The canning and cold storage of products which were until within a very recent period so perishable as to enter into the consumption only during brief periods of each year, and over limited areas, have transformed them into considerable ingredients of the world's supply of staple necessaries. Vegetables, fruits, and fish have thus come into direct competition with grains and meats, thereby still further increasing the disparity between the demand and supply of agricultural foods. In this way the unused surplus of agricultural products and their equivalents is year by year swelled, to the manifest disadvantage of the producer, and to the apparent enhancement of the world's productive capacity.

Nor is it probable that the increase in the supply of food products has yet reached its limit.

A scientific survey of the food-producing capacity of the earth, even with little, if any, enhancement of the present supply of labor, makes it evident that the present supply might be largely increased, possibly doubled, within the scope of existing lives.

2. Concurrently with an increase in the supply of the products of the field, the progress of invention has tended in certain respects to curtail demand for them. Such animal products as tallow and grease, for example, have been largely displaced for lighting purposes by the mineral products, petroleum and coal. Red dye, once obtained from a vegetable, is now derived from the product of a mineral. Wood first gave way to coal for purposes of combustion, and then to iron and steel as materials for construction. The utilization of cotton-seed oil in the production of lard and its substitution for tallow and grease in the manufacture of soap have unfavorably affected the prices of hogs and cattle. Cocoa oil has also come to be largely employed in making soap; and the large importation of this oil is at once the measure of the popularity of the soaps into which it enters and of its own depressing influence upon the prices of cattle and hogs, the by-products of which it displaces. One of the most striking examples, however, is the substitution of electricity for horses as the motive power in the street-railway service, thereby diminishing not only the value of horses, but also that of all kinds of feed and forage.

> It has been estimated that electric lines have already displaced no less than 275,000 horses. . . . At a moderate computation this number of horses would require about 125,000 bushels of corn or oats a day. A decrease of 125,000 bushels a day is equal to 45,000,000 bushels a year, enough to appreciably affect the prices of those grains.

The bicycle has exerted a similar influence. Its worst effects have probably appeared in the horse and carriage trades, and allied businesses. "The practice of horseback riding is nearly extinct, and saddle horses are a drug in the market."

3. The dependence of agricultural profits upon the uncertainty of the weather is another of the unfavorable conditions with which the farmer must contend. With the disastrous consequences of crop failure we are already familiar. But nature frequently, though not as disastrously, interferes with the farmer's prospects by rewarding his labors with an over-abundant harvest. The corn crop of 1885, for example, though only slightly greater in area than that of 1887, was nearly 500,000,000 bushels greater in yield, while the aggregate money value was

$20,000,000 less. Again, a large increase of acreage, accompanied by favorable weather for the growth of the crop, sometimes results in such an enormous yield as to deluge the market and kill the price. Thus, in 1889 favorable weather, in connection with an acreage 6,600,000 greater than in the following year, resulted in an unprecedented crop of some 650,000,000 more bushels than in 1890, but so flooded the market as to net the producers $150,000,000 less. Further, for each of the four years preceding 1889 the acreage of oats was less than for that year, and the yield also was considerably less; but the total value of the crop was invariably greater. The acreage of cotton in 1891–1892 was 2.3 per cent less than in the preceding year, the yield 379,800 bales greater, and the total money value of the crop $37,000,000 less. The acreage in 1893–1894 was only slightly in excess of that of 1892–1893, yet the yield was 849,500 bales greater, while the aggregate value to the producer was $4,143,000 less.

4. The extent to which agriculture is carried on in modern industrial society, with the purpose of supplying the market, frequently results in production ill adjusted to existing conditions. The farmer expects to consume only a small part of the products of his labor, and to exchange the remainder for articles suited to his wants. Each agricultural producer, proceeding without an intelligent knowledge of what his fellows are doing, endeavors to create a maximum product. The result is that the wealth-producing energies of the farmer are not properly distributed, and the products of his labor are not adjusted in the proper proportion to the wants of society. Consequently, the producers of such food products as exist in relative over-abundance are injured in the process of exchange by receiving less than an economic equivalent for the product of their toil.

Four of the unfavorable conditions under which the business of the farmer is conducted have now been considered. To the extent that population multiplies under the stimulus of a bountiful food supply, the increasing abundance of farm products tends to correct itself. Any measure capable of promoting the per capita consuming power of the masses or of diverting energy now expended in food production to some more profitable field

of employment would afford some relief. The curtailment of production through the development of a taste in the community for other than productive employment would also have a favorable influence. The unfriendly influence of climate can to a small extent be overcome by irrigation, or by the adoption of a system of agriculture better suited to climatic environment. By increasing the diffusion of information, so that the farmer may expend his energy with a better knowledge of what his fellows are doing, the evils of disproportionate production may be slightly diminished. But here the prospect of amelioration ends. Beyond what is involved in the above suggestions, it is probable that no remedy, legislative or other, can render the influence of these conditions less unfavorable to profitable crop-production. They are for the most part unalterable, and no discussion of any remedy proposed in the farmer's interest can proceed intelligently without holding them constantly in mind. They therefore mark the limit within which statesmen and others interested in the welfare of the farmer should confine their efforts. The recognition of such limitations may dampen the zeal of social enthusiasts; but, on the other hand, it will discourage them from advocating fanciful and impracticable schemes, and will save society from the economic loss arising from the unstable business conditions which these schemes create.

Proceeding now to the remedies that have been proposed for the difficulties of the agricultural class, we shall consider only four: namely, the free coinage of silver, a general property tax, an export bounty on agricultural staples, and a greater development of thrift among the farmers.

The free coinage of silver and the farmer. That the general range of prices for the products of the farm has greatly declined since 1873, no one will deny. There are those who, overlooking the influence of the forces to which attention has just been called, believe that the cause of this fall is the appreciation of gold. Whether or not gold has really appreciated (that is, become dearer in terms of commodities because of its scarcity) is beyond the scope of the present inquiry. Assuming that it has, let us consider to what extent changes in the prices

of farm products during the past twenty-three years can be satisfactorily explained as a result of such appreciation.

The index numbers representing the weighted average price in gold of nine farm products — barley, corn, cotton, hemp, meats, oats, rye, tobacco, wheat — from 1873 to 1891 are shown in the following table:

1873	106	1883	102
1874	123.5	1884	100.8
1875	116.8	1885	87.9
1876	91.9	1886	87.5
1877	96.5	1887	89.6
1878	89.7	1888	93.6
1879	91.1	1889	86.5
1880	102.9	1890	93.7
1881	117.1	1891	98.4
1882	120.3		

Even a casual survey of these figures shows the utter futility of attributing the movement of farm prices to an appreciation of the monetary standard. Assuming that the lower level of 1891 as compared with 1873 is due to appreciation, it is clear that the higher levels of 1874, 1875, 1880, 1881, and 1882 cannot be thus explained. Still less adequate is the increasing value of the monetary standard to account for the fluctuations in price of any one farm commodity. Further, the index numbers indicate that the prices of tobacco, rye, meat, and corn were higher in 1891 than in 1890, while the prices of barley, cotton, and oats were lower. In the presence of these facts, the theory that the change in the prices of farm products finds any adequate explanation in the increasing value of gold breaks down hopelessly.

During the years since 1891 there has occurred from time to time a marked fall in the prices of farm products. Are we to believe that simultaneously in each instance there took place an increase in the value of gold? The farm price per bushel of the corn crop of 1895, for example, was 30 per cent less than the average annual price for the ten years preceding. Is the appreciation of gold or a crop 25 per cent greater than the annual average, for the preceding decade the more plausible explanation? Was it the appreciation of gold that made the price of potatoes

so low in 1895, or was it a crop which exceeded by nearly 90,000,000 bushels that of any year, with the single exception of 1891, during three decades? The average farm price of wheat for the three years ending with 1894 was about 30 per cent less than for the three years ending with 1891. Is the gold standard or an increase of 236,000,000 bushels in the annual average of the world's supply the more reasonable explanation? Obviously, the fall of prices disclosed by such facts cannot be satisfactorily explained by an increase in the value of gold.

These downward movements in the prices of farm products were severe shocks to agricultural prosperity because they were sudden and unexpected. Compared with the gradual fall of prices that has occurred since 1873, they were relatively far more disastrous to farm interests. A rainfall of four inches distributed throughout twenty-four hours may do little or no damage; but the same precipitation within an hour carries in its wake disaster. What is to be said, then, of the assertion that, owing to a steady fall of prices, there has been no agricultural prosperity since 1873? The most obvious reply is that the statement, in this unqualified form, does not agree with the facts. During the years 1879–1884 there was unusual agricultural prosperity, as a comparison of agricultural with general prices will clearly show. A similar comparison shows that 1888–1892 were years when farmers were enjoying fair times. This does not mean, of course, that there was an absence of grumbling, or that no one complained of hard times during either of these periods. Judged by this test, indeed, there has never been a time in our country's history when agricultural distress was not the rule and prosperity the exception.

It is most certainly a sudden rather than a steady fall of prices that entails disaster upon the farmer. As Professor J. B. Clark puts it:

> How does a slow and steady appreciation of any metallic currency affect the relations of business classes? Does it rob borrowers and enrich lenders? Does it favor the consumers by giving low prices and hurt producers in the same degree? Does it tax enterprise and paralyze the nerves of business? The answer is an emphatic No. Steadiness in the rate of appreciation of money is the salvation of business. . . . It is changes in the rate of inflation or of contraction that produce marked and damaging effects at the critical points of business life.

Whether or not this view be accepted as sound, it will be well to bear in mind that fully 75 per cent of the mortgage debt in force January 1, 1890, was incurred within five years, and but 8.02 per cent before 1880. Consequently, at any given time the increased burden from outstanding indebtedness because of the gold standard cannot be very considerable. These facts also render untenable the position of those who hold the gold standard accountable in part for the frequency and severity of panics and commercial depressions.

If the appreciation of gold is responsible for the present low ebb of agricultural prosperity, we should naturally expect the farmers of Canada, separated from those of the United States only by an imaginary line, to share in that opinion. That they feel quite keenly the stress of the present era of low prices does not admit of doubt; yet it is perfectly clear that they do not find the cause of their difficulties in the gold standard. A platform adopted at London, Ontario, September 22, 1891, by the Patrons of Industry of that province, contains declarations upon the public lands, civil-service reform, economy in the administration of the government, railways, etc., but has not a word to say about the currency. The editor of the *Farmer's Advocate and Home Magazine* of London, Ontario, wrote me May 2, 1896:

> There has been no demand here for more currency, and beyond an article or so in the *Advocate* and some correspondence and editorial discussion in the *Globe* newspaper of Toronto, very little is said about bimetallism; it is not a live subject here at all.

John W. Coppinger, United States Consul at Toronto, wrote on April 2, 1896: "There is no agitation here concerning the finances; people seem to be satisfied with their banking and currency system." Professor Goldwin Smith, in a personal letter of May 20, 1896, said: "No man of sense can imagine anything but mischief could be done by a derangement of the currency." Certainly the contrast between the farmers of the United States and those of Canada in their views upon the subject of currency could hardly be more striking. And the contrast is emphasized when we consider that "the difficulties surrounding agriculture are precisely the same in Canada as they are in the United

States"; and that the per capita circulation there is less than half what it is here.

Having considered the most serious criticism urged against the gold standard, let us inquire how a law providing for the free and unlimited coinage of silver at the ratio of 16 to 1 would affect the interests of the farmer. That the immediate effect would be a precipitate passage to a silver standard hardly admits of a doubt. It is not a matter for surprise that, with nothing to check the force of the fall, the proposal to drop industrial interests abruptly to a silver standard should destroy the spirit of confidence, and cause the business world to look forward with dismay and terror to the readjustment of values which would follow. That the transition to this cheaper monetary standard would be accompanied by rising prices in terms of silver is a proposition from which no one is likely to dissent. Let us examine the effect of this movement by comparing the cases of two farmers, A and B. We will suppose each to have laid by a surplus of $1500 in cash five years ago, and that A invested that amount in farm land, while B loaned a like sum to an enterprising neighbor. Any proposal that would involve depriving A of 25 per cent or more of his real estate would be promptly denounced as dishonorable. It is difficult to see how a proposition which involves depriving B of a portion of his claim upon dollars can stand ethically upon any higher level. The force of the comparison is strengthened if the farmer who invested his money in realty selected farm land or city property that has since increased in value. On what ground, therefore, does the plea of social necessity select as its victim the man who has a claim upon dollars in preference to the one who has a claim upon realty? Moreover, 72 per cent of farm-owning families own subject to no mortgage incumbrance, and of the remainder by far the greater number are able to pay their debts. Judged by immediate results, then, what is to be said of a measure that would disturb debit and credit relationships throughout industrial society for the benefit of the few?

But perhaps the free coinage of silver would usher in an era of prosperity such as would justify the immediate losses which it would inflict upon individuals and society. On the contrary,

this is very improbable. The rise in prices would stop after the transition to the new standard was an accomplished fact. It is probable, therefore, that, after industry had experienced a cycle of abnormal activity, the debtor class would be larger and more heavily involved than at present; and, with few exceptions, the arguments now advanced in behalf of the free coinage of silver would apply with equal force in support of an irredeemable paper currency.

Supposing this danger to be escaped, what peculiar virtues does silver possess which entitle it to preference over gold as a monetary standard? The advocates of free coinage assert that since 1873 silver has maintained a more constant purchasing power over farm products than gold; and in proof of this proposition usually cite the downward movement of the price of silver in company with the prices of cotton and wheat. Unfortunately for this theory, examples of a contradictory character are quite as numerous. During the four years ending with 1895, 50 per cent more silver was required to buy 100 bushels of corn than during the four years ending with 1876; while 75 per cent more was needed to buy 100 pounds of hogs. During the four years ending with 1895, 75 per cent more silver was necessary to buy 100 pounds of cattle than during the four years ending with 1880; and 50 per cent more to buy 100 pounds of tobacco or a ton of timothy hay. Evidently the statement that silver possesses constant purchasing power with reference to farm products is an unwarranted generalization. It is true that the price of silver and the general average of prices for the principal products of the farm have both declined since 1873; but it is also true that a comparison of the four years ending in 1876 with the four years ending in 1895 shows the former to have declined about twice as much as the latter. The power to command the same quantity of farm commodities from time to time is therefore no more an attribute of silver than it is of gold. Furthermore, were it true that silver has been superior to gold in this respect during the past quarter of a century, what assurance is there that it would continue to be so during the next twenty-five years?

Lastly, would silver be a steadily depreciating standard? This is a difficult question to answer definitely. Admitting a depreciating

standard of value to be desirable from the point of view of the farmer, it is consequently by no means certain that its advantages can be realized by the free coinage of silver. Moreover, in view of the analysis offered above of the appreciation of gold, what the farmer might hope to gain from a currency based upon a depreciating money metal is at best of doubtful importance.

This, then, is our principal conclusion: The independent, free, and unlimited coinage of silver by the United States at the ratio of 16 to 1 will not promote the prosperity of the American farmer. Passing to a silver standard will only temporarily lighten the burden of mortgage debt resting upon farms. Those farmers whose debts are payable in gold would not even experience temporary relief. During the transition to the new standard, moreover, delinquent debtors would be more or less seriously embarrassed by the disposition of their creditors to enforce immediate payment. The rise of prices, by increasing the cost of living, would undoubtedly curtail for many years the consuming power of the wage-receiving class, and thereby lessen somewhat the demand for the products of the farm. That higher prices for his products, in terms of a cheaper monetary standard, can enable the farmer in the long run to command more of the material comforts of life than he would enjoy under the present standard is a proposition difficult to understand. Violent fluctuations in prices under a silver standard, whether due to over-production, commercial depressions, or any other cause, would probably be no less frequent, and the losses thereby inflicted upon agricultural industry no less disastrous than at present. Steadiness of purchasing power is one of the marks of a sound monetary system, and there is no reason to believe that a currency based upon silver is superior for this purpose to one based upon gold.

An export bounty upon agricultural staples. Whatever acquaintance the public may have with this proposition is due very largely to the energy, enthusiasm, and time devoted to its advocacy by one man, Mr. David Lubin of Sacramento, California. According to Mr. Lubin, our protective tariff system is mainly responsible for the economic difficulties of the American farmer. The producer of agricultural staples, he contends, receives

free-trade prices for what he sells, but for what he buys is compelled to pay prices enhanced by a protective tariff. For example, Mr. Lubin has said: "The producers of agricultural staples under the present system must foot the entire cost of protection, which, at a conservative estimate, must foot up to $1,000,000,000 a year." The object, then, of a system of bounties upon exports of agricultural staples, Mr. Lubin tells us, is to restore to the farmer that of which protection unjustly deprives him.

The determination of the truth or falsity of Mr. Lubin's statement as to the effect of the tariff on the farmer does not concern our present purpose. Admitting it to be correct, however, what is to be said of his remedy? Were it to accomplish all that Mr. Lubin claims, it would simply restore to the farmer $1,000,000,000 of which he is annually deprived by protection. When this has been done, who is the gainer by the transaction? To ask the question is to answer it. Mr. Lubin's argument resolves itself into this: society is to bear the expense of the administrative machinery necessary to a process by which one class collects money from another only in turn to pay it back. It is clear, therefore, that whether an export bounty upon agricultural staples be wise or foolish, the argument used by Mr. Lubin in its support may be dismissed without further comment.

It is worth while, however, to consider the proposition itself, not only from the farmer's point of view, but also in its political and financial aspects, and in reference to its bearing upon economic and social progress and upon the wisest adjustment of the wealth-producing energy of the nation.

The manner in which an export bounty is expected to benefit the farmer is as follows: the bounty is to be paid directly to the exporters of farm products; competition among the exporters will raise the price of the quantity exported to the extent of the bounty; the quantity bought to supply the home market will command the same price; consequently, the value of the entire product will be artificially enhanced, and the profits of the farmer correspondingly increased.

It is a serious question, however, whether this can be accomplished without so stimulating production as to defeat the avowed

object. The experience of European governments with bounties upon the exportation of beet sugar clearly indicates the probability of such a result. The insidious origin of this policy in Germany is an interesting episode in economic history. Other nations of Europe, such as France, partly to keep their own sugar producers from being at a competitive disadvantage and partly through national jealousy, inaugurated a similar policy, until most of the nations of the Continent have vied with each other in favoring the sugar industry. The result has been an enormous increase in the beet-sugar product, from 2,223,000 tons in 1885–1886 to 4,975,000 in 1894–1895, accompanied by such a reduction in price that the industry is seriously depressed. Producers complain that the prices received do not cover the cost of production, and it has even been proposed to establish a sugar bank to relieve distressed refiners and beet-root growers. In addition to the loss sustained by the producer, the bounty system upon sugar costs the taxpayers of Europe about $25,000,000 per annum. Consequently, as a reward for this expenditure of the public treasure, the sugar producers of Europe have been led to do business at a loss, while the other nations of the world have had the benefit of cheap sugar. In addition to the economic evils which the policy entails, the fact that one nation cannot abandon it independently of the others, without leaving its own producers at a competitive disadvantage, is a matter that should not be overlooked. The overthrow of the system is thus subject to all the delay and uncertainties of international agreement. This experience of European nations certainly indicates that a policy of export bounties upon agricultural staples in the United States would stimulate production in our own country; but it also indicates that other food-exporting nations would be led to adopt a similar policy and that in consequence no advantage would accrue to the American farmer.

As regards cotton, it is almost certain that an export bounty would not permanently enhance the price. The proof of this proposition lies in the fact that the United States is the most important single factor in producing the world's cotton supply. Her annual product is 50 per cent of that of the entire world.

Of England's cotton importations, 1890–1893 inclusive, 76 per cent came from the United States; and during the same period 69 per cent of all importations into Europe had the same origin. These facts not only reflect the extent to which the world is dependent upon the United States for its cotton supply, but also indicate that the low prices of recent years are to be attributed to the enormous scale upon which she has been engaged in the production of this commodity. The cotton famine during the Civil War, when production in the United States was largely suspended, conclusively shows that the size of the American crop is the principal factor in determining the price. In 1864 cotton sold for $1 a pound; but after the war planting was resumed, and the European supply increased to such an extent that stocks began to accumulate in the ports, and prices declined with the annually increasing crop in this country.

The plea cannot be made that an export bounty is necessary to give us a commercial advantage over competitors in the growth of cotton, for we are already easily supreme in this regard. Moreover, the enhancement of the price of cotton by means of an export bounty will not increase the world's demand to the extent of a single pound, save as it cheapens the price. Its only influence will be to augment the production of a commodity of which there is already too great an abundance, to depress its price still further, and to defeat the very object for which the bounty is proposed. It is even probable that, with the world's markets overstocked and the home market dull, because of the enormous crops in the United States, those engaged in the export trade would underbid each other in a struggle for its control, and the bounty would thus be handed over as a gift to foreign buyers of cotton. From the point of view of European importers, manufacturers, and consumers of cotton, such a policy will doubtless be regarded with unconcealed favor; but from the standpoint of an American the policy of expending the public treasure in the interest of a class of producers, only to leave them in no better plight than they were and to furnish the other nations of the world with a raw material at less than its normal price, can hardly be regarded with favor.

What has been said concerning cotton also applies very largely to corn. To even a greater extent than in the case of cotton, the volume of the American crop fixes the price. As to competition with other countries, there is none worthy of serious consideration. Less than 4 per cent of the yearly crop of corn is exported, while something like 80 per cent is yearly consumed in the very county where it is grown. The price is, consequently, dependent not only upon the American supply but also chiefly upon the American demand. Furthermore, the export demand for corn is not increasing. Notwithstanding special efforts made to introduce corn in various forms as a food product among European peoples, the average annual exports for the ten years preceding 1895 were less by 7,400,000 bushels than for the ten years preceding 1885. During these two decades the greatest export movements have occurred as frequently in years of moderate as in years of exceptionally large crops. Under such circumstances, in the competition among exporters to supply the foreign demand, an export bounty upon corn would be quite as likely to go to the foreign consumer as to the American producer. Such a result is indicated by the experience of Nebraska farmers in 1884, 1886, and 1890. In those years railway rates upon corn from points in Nebraska were reduced in deference to the demands of farmers, with the effect, however, not of increasing the price to the producer, but of lowering it to the consumer. Even if exporters were induced by the bounty to offer a higher price for the supply of the export trade, that trade seems relatively too insignificant to affect materially the farm price of corn in the United States. Assuming that the price might be momentarily enhanced by the bounty, the mere fact that the area devoted to corn cultivation is capable of indefinite extension leaves little reason to suppose that such an advance would be permanent.

The cases of hay and oats are in nearly all particulars analogous to that of corn. An analysis of the probable effect of an export bounty upon wheat and meats, also, would lead to similar conclusions.

From the political point of view, a system of bounties on the exportation of agricultural staples is clearly impracticable in the

United States. Even if such a scheme were once in operation, there would be no hope of its permanence. It would be denounced as embodying class legislation. Many farmers, disappointed at the small benefits accruing to them from the measure, would give it but indifferent support. If it raised prices the hostility of the non-agricultural portion of the population would be aroused against it. The short life of the sugar-bounty clause of the McKinley tariff act of 1890 illustrates how such measures fare under a popular government. Under a despotism a policy of bounties on exports might be feasible; but with a government that so quickly reflects a change in public sentiment as our own, there would be no assurance that such a measure would endure for any considerable length of time.

Nor does the policy we are considering present a more favorable aspect from the financial point of view. Under existing circumstances, when the national revenue is inadequate to meet the needs of the government, the inauguration of a bounty policy would seriously embarrass the treasury and necessitate a reconstruction of our whole fiscal system. To make good the increased deficit it would be necessary to enlarge the excise, to place imposts upon sugar, tea, and coffee, and probably to increase the protective features of the tariff, though the last device, according to Mr. Lubin, would take from one pocket of the farmer what the export bounty had lodged in the other. To tighten thus the screws of the machinery of taxation in the interest of a class would run counter to the prejudices of the people and would thereby violate a fundamental principle of finance. Nor is this all. The volume of agricultural exports varies from year to year with the foreign demand and other conditions beyond the power of government officials to control or forecast. The exportation of wheat in the fiscal year 1892, for example, was more than three times that of the year preceding. There was also an enormous and unforeseen increase in the exports of farm staples during the calendar year 1896, as compared with those of 1895. The impossibility of adjusting appropriations to the actual requirements of an export bounty upon agricultural staples is therefore apparent. Such a bounty is thus open to the further serious

objection that it would greatly increase the difficulty of maintaining a proper balance between the annual income and the expenditure of the nation.

The principle which lies at the basis of a bounty upon agricultural exports is, furthermore, antagonistic to economic and social progress. It looks with disfavor upon the introduction of improvements, whereby production is cheapened and human wants are more easily satisfied, and places the interest of a class above that of society in general. Carried to its logical conclusion, the principle would justify some kind of state aid to those in every industry, who, through being under-sold, are subjected to financial loss. Within the past fifty years the machinery employed in the iron, cotton, and woolen industries has several times been rendered worthless, save for use as old iron, by the introduction of cheapening appliances in production. Nor has the process stopped. The owners of machinery that is, so to speak, invented out of existence suffer loss; but society, being enabled to satisfy its wants more easily, gains. That the advantage to the mass warrants disregard of the detriment to the few is a familiar idea in respect to other industries than agriculture. Society welcomes cheaper transportation, cheaper clothing, and lower prices for all of the products of city life; and when such changes occur the public looks on with unconcern and even with some degree of pleasure — especially if those upon whom such economic progress entails financial loss are the stockholders in some corporation. Certainly, then, the process which cheapens food — a prime necessity of life — is not to be judged by a different standard.

Finally, we have to consider the policy of bounties in its bearing on the fact that, considering their efficiency, too large a percentage of the people of the United States are engaged in the production of food. Bounties upon agricultural exports would simply be an inducement to men to engage in an industry that is already overdone. Nearly 40 per cent of those ten years of age and over employed in various occupations in the United States are engaged in farming pursuits, while in the highest development of agriculture 20 to 25 per cent at most could furnish food for all.

At the present time the rapid increase of city populations, the development of manufacturing industries, and the larger expenditure of energy in the production of such articles as eggs, butter, small fruits, etc., are tending to reduce the plethora of those engaged in the production of the staple products of the farm, and to bring about a more healthy balance of industries. It is difficult to realize the rapidity with which the people of the United States are passing industrially from agriculture to manufacturing. Between 1850 and 1890 the capital invested in manufactures increased from $533,000,000 to $6,180,000,000, and the wages annually paid from $237,000,000 to $2,000,000,000. The manufactures of the United States "exceed those of the mother country in the proportion of 7 to 4 and are increasing at a rate which, if maintained for a quarter of a century, will make the United States as important a source of supply for manufactured articles as it now is of agricultural products." The United States is going into the business of manufacturing for export at a rate which is causing grave apprehensions to English and other European manufacturers, and "will probably in the near future dominate all the markets of the world in the production of manufactured goods." American steel, dry goods, paper, and carpets are successfully competing in the markets of the world, even in those of England herself. Only recently a press dispatch announced the shipment of a cargo of twenty locomotives on a single vessel to Russia.

All this is indicative of the direction in which the highest economic interests of the nation lie. However much relief legislative remedies may afford the farmer, his prosperity is largely dependent upon such a spontaneous redistribution of the working energy of the people as will secure the wisest adjustment of economic force. A fiscal policy like the export bounty, which would counteract this tendency, would strike at a process from the further progress of which the farmer has much to gain, and would prevent the most effective application of the wealth-producing power of the nation.

To summarize: in considering the proposal to establish a system of bounties upon exports of agricultural staples, we have found

that Mr. Lubin's argument in its behalf is without logical foundation; that such a system probably would not permanently maintain the prices of agricultural staples at a higher level; that under our form of popular goverment this policy could not be carried out with any steadfastness of purpose; that it is contrary to the financial interests of the treasury; that it is opposed to economic and social progress; and that it is hostile to the most economic expenditure of the wealth-producing energy of the nation.

The importance of thrift as a remedy for agricultural depression. Those whose knowledge of the subject is a product of imagination rather than of actual experience are prone to dwell upon the attractiveness of farm life. The pleasures of agriculture have long been a favorite topic with poets; and even hard-headed business men are frequently convinced, by the familiar pictures of nature's coöperation with the farmer — of the growth of his crops and live stock in value while he is asleep — that the life of the farmer is one of comparative ease. In marked contrast with such an impression are the stern realities: nature frequently defeats the efforts of the farmer, and his life is spent in persistent physical toil. In this routine the women of his household coöperate. They begin with the early dawn a busy round of toil that scarcely ends with darkness. On many farms they not only cook, wash, bake, and care for the house, but also supply the table with vegetables, milk, butter, eggs, and poultry, besides paying for the necessary groceries of the family and for their own clothing out of the products of the garden, dairy, and hennery, which they care for with their own hands. Probably among no class of equal social standing do the women so generally work as hard or contribute as much to economic success.

The conditions of success upon the farm are probably as well supplied as anywhere among those religious sects known as Dunkards and Mennonites, and nowhere else are the evidences of agricultural prosperity more apparent. But among the mass of our country people, as President Jordan has observed, "a notion has been spreading . . . that the dwellers in towns do 'not have to work to make a living, or do not have to work hard'; and the farmer is coming to think that 'the day of hard

labor has passed, or ought to pass.'" The economic future of all who act on this principle is without hope.

It is not enough, however, for the farmer to work hard: he must also exercise good business judgment. The farmer, at the present time much more than formerly, sells what he produces and buys what he consumes. His business relationships have greatly enlarged, and it follows that a knowledge of business methods counts more in his favor. A man may be highly industrious and yet, owing to a deficiency in business tact, may fail in the struggle of life.

Success in farming depends, finally, upon supplementing hard work and sound judgment with frugal living. The farmer who would woo prosperity with any hope of winning her must live within his means. It is impossible to state in general terms a rule of justifiable expenditure: this is a matter each must determine for himself. Some who are struggling to pay for a farm find it necessary to limit their expenses to the simplest necessaries of life. As Booker T. Washington has said: "Art and music for people who live in rented houses and have no bank account are not the most important subjects to which attention can be given. Such education creates wants without a corresponding ability to supply these increased wants." Social philosophers will probably criticize the standard of living involved in this view. It is not necessary, however, for all farmers to be equally saving. Some have ample means for books, magazines, music, travel, the higher education of their children, modern and well-furnished houses, and commodious barns. Some who could well afford these things are lacking in taste for them, while others have found the struggle of life so severe that they have never cultivated the habit of spending money sufficiently to find it a pleasure. In general, however, even those farmers who are fairly well-to-do find it necessary to refrain from anything approaching luxury or ostentation.

The suggestion that the solution for the farmer's economic difficulties depends upon limiting expenditure to income meets with various objections. It is argued, for example, that were the doctrine of saving herein enjoined to be generally carried out,

industrial paralysis would follow because of the meagerness of consumption. In reply to this, it is to be observed that thrift and not parsimony is the quality commended. The former inculcates saving in the present, with reference to spending in the future; some material comfort is sacrificed now, but only for the purpose of having it with greater certainty in time to come. The latter plans to avoid expenditure everywhere and always. Thrift is not content with securing "unto the end a meager subsistence without improvement of conditions of life and surroundings"; parsimony is content with this. Thrift is, therefore, economically sound, while parsimony is not. Looked at in its true light, the doctrine of saving is complementary to that of spending. The latter is conditioned by the former and *vice versa*. But under the conditions of American life, society need give itself no concern lest the disposition to spend should fail to keep pace with the ability to do so. We may at least be assured that no man of sense, who is struggling to win economic independence on the farm, will spend in order to make times good. Prosperity based upon extravagance cannot be permanent.

It may be urged, again, that farmers should live as well as the members of any other social class; and that, if they are to adjust expenditures to incomes, they will not be able to share in the good things of life to the same degree as the members of some other classes in society. In this observation there is much force; and it may be remarked in passing that the writer yields to no one in his desire that farmers should have as many of the material comforts of life as the members of any other class. But the incontestable fact is that they cannot; nor is this peculiar to the occupation of the farmer. The standard of comfort enjoyed by those who live in towns and cities also varies widely. How far the present system of distribution falls short of giving each his due, it is impossible to say. It is probable, however, that any system that did not recognize differences in skill, executive talent, etc., as a basis upon which to assign to some more and to others less, not only would be doomed to failure, but would so curtail production as to be highly injurious from a social point of view.

In other words, differences in the standard of comfort must be accepted as permanent facts in social arrangements.

Something more than criticism of the present order of things is necessary for the American farmer. He stands confronted with certain conditions which are, for the most part, unalterable. What, then, is he to do? There is but one reply. Face the conditions as they are, and pay for success the price which they require. At the present time, side by side with those who fail are others who, by their industry, sound judgment, and frugality, are going on to a competency. These are the qualities through which tenants are rising to the ownership of the farms which they occupy, while owners are in turn descending to the station of tenants. In the present industrial struggle the fittest are destined to survive, and the test of fitness for each individual lies in the adjustment of expenditure to income. This has ever been the method by which the American farmer has achieved success, even during times of the greatest agricultural prosperity, and especially during every period of low prices for the products of the farm. The conclusion is not hastily drawn, therefore, that those qualities which are best summed up in the word "thrift," and which have served the farmers of the United States so well in the past, are their main reliance during the present period of agricultural depression.

CONCLUSION

For the purpose of continuing the consideration of the farmer's economic condition, it is intended, in this concluding part, to make a comparative study of prices, of wages of farm labor, of taxes, of rural wealth, of standards of living in agricultural communities, and of the farmer's situation in contrast with his fellows.

1. *Prices.* In addition to the light thrown upon this subject in the preceding pages, it is important to hold in mind the following considerations:

The farmer's interest does not lie exclusively in receiving remunerative prices for the commodities he may have to sell. His well-being is quite as much dependent upon the prices he in

turn must pay for articles which either enter into the personal consumption of himself and family or are used in the process of production. A comparative study of the fluctuations in the prices of agricultural products and of commodities in general between 1840 and 1891 reveals several important facts:

First, there have been three periods during which the average of agricultural prices has ruled lower than that of general prices: 1840–1853, 1876–1880, 1883–1890. During the intervening periods agricultural prices ranged relatively high. From 1840 to 1853 the general average of agricultural prices ranged lower than at any other time in fifty-two years. In Ohio three-year-old ox teams, well matched and well broken, sold in 1842–1846 for $24 to $30; in 1850, nice lambs weighing forty pounds sold for 56 cents per head, four-year-old steers for $15, dressed pork at $1.50 per hundredweight, cheese at 4 to 4½ cents per pound, wheat at 25 to 30 cents, and oats at 10 to 15 cents per bushel.

Second, with the exception of 1860–1865, a sympathetic relationship is found to exist between general and agricultural prices. As a rule, when the farmer received low prices for his produce, he paid low prices in turn for the articles he bought. This is well illustrated by the tendency of prices of farm machinery to move downward in company with the price of farm produce. Thus, it has been shown that the number of bushels of wheat, corn, or oats required to pay for a list of ordinary farm implements, including a binder, a mower, a two-horse cultivator, and a wagon was less in 1889 than in 1873. The report of the Pennsylvania Bureau of Industrial Statistics for 1890 shows that in Chester County the average decline of wheat from 1880–1881 to 1889–1890 was 29.1 per cent; of corn, 16.9 per cent; of oats, 15.4 per cent.

> During the same time the decline in the more costly farm machinery . . . was 33.9 per cent; in the lesser farm implements, such as shovels, rakes, hoes, scythes, and pitchforks, 26 per cent; and the average rate of decline in ten selected articles of staple use, such as sugars, tea, coffee, salt, and standard cottons, calicoes, ginghams, and coarse boots, was 15.3 per cent.

Third, the economic condition of any particular farmer depends largely upon the kinds of commodities he produces, and

upon the proportions in which he puts them upon the market. For example, in the seven years ending with 1891, the average price of wheat was 24 per cent lower than in 1860, that of corn 25 per cent, that of hogs for live weight 22 per cent; while during the same period tobacco averaged 20 per cent higher than in 1860, mutton sheep 29 per cent, and fat cattle 28 per cent.

Likewise, the farmer's condition depends very greatly upon what articles he buys, and in what ratio various commodities enter into the budget of his expenditure. Thus, during the seven years ending with 1891, cloths and clothing were 16 per cent lower than in 1860, metals and implements 24 per cent, and house-furnishing goods 30 per cent. The conditions have therefore been favorable for those families with a liking for good clothes and for a house furnished in an attractive manner. On the other hand, the farmer who built a new house or barn in 1891 had to pay 24 per cent more for lumber and building materials than in 1860.

No comparative study of farm prices, however, should fail to take account of the low price level for farm products which has prevailed since 1891. The effect of this upon the burden of mortgage indebtedness has already been pointed out. But the farmer has also suffered in consequence as a consumer. Owing to his inability to reduce adequately the cost of production, the simultaneous decline in prices of commodities which he buys has afforded him no compensation commensurate with the fall in the prices of his own products.

2. *Farm wages.* In regard to the cost of labor, the farmer has been placed at a disadvantage by the recent fall in prices. Wages of hired labor have declined somewhat during recent years, but not to such an extent as adequately to offset the downward movement in the price of farm commodities. Today wages of farm labor are almost double what they were fifty years ago. This increase in the cost of labor, together with the uncertainty about securing any help at all during critical periods, such as harvest time, has doubtless hastened the introduction of labor-saving machines upon the farm as a matter of economy, convenience, and necessity. Specialization in farming has also

quickened the introduction of agricultural machinery. This is illustrated in the development of wheat production in the Northwest, which could not have taken place on such a grand scale without the aid of the binder. But to whatever extent machines may have been substituted for manual labor, there has been since 1891 no reduction in their cost sufficient to lessen materially the farmer's outlay in production. Nor was the fall in prices of farm products beginning with 1892 due in any marked degree to the introduction of machinery prior to that date. Successive improvements in a machine and reductions in its price always precede its general use; and these features were not especially characteristic of the several years preceding 1892. There was, however, a noticeable increase in the export value of agricultural implements during these years, and of this increase harvesting machinery contributed an important item — a fact probably related to the enlarged wheat production of Russia and Argentina in recent years.

3. *Rural wealth.* During the forty years ending with 1890, rural wealth increased fourfold. Even during the decade 1880–1890, notwithstanding the marked depreciation of farm lands in certain states, there was for the country at large a substantial advance in the sum total of rural wealth. The source of this increase, however, has not been confined to the ordinary profits of the farmer's business. Part of it is to be credited to soil exploitation, and part to the "unearned increment" incidental to the growth of land values. An increase within a generation of more than $25 per acre in the value of farm lands in many states roughly measures the influence of the latter factor; that of the former is indicated by the cost of purchased fertility. It has been demonstrated that, though "the wheat crops of Ohio have been slightly increased by the use of commercial fertilizers, . . . the average cost of this increase has equaled its market value." These conditions have unquestionably attracted energy from other pursuits into the business of food production, with the effect of depressing agricultural profits proper below their natural level.

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4. *The farmer in contrast with his fellows.* Let us now compare the farmer's well-being with that of his fellows in other

walks of life. In addition to the economic and social forces favoring the accumulation of urban rather than rural wealth that were considered in Part II of this essay, certain further disadvantages of the farmer deserve attention.

Again, the farmer is at a disadvantage in the fact that "he deals altogether with a raw material." In explanation of this statement, President James H. Canfield writes:

> It seems to me that as civilization advances, and as invention and ingenuity carry the final product, in a certain sense, further from the initial point at which the work of transmutation is taken up, the greater part of the returns will go to reward the ingenuity and intelligence of the latter processes; and a much less proportionate part will be returned to the one who practically handles the raw material. I cannot believe that the man who mines iron and coal will ever be as well paid as the man who makes watch springs. Perhaps a better illustration would be that the men who construct the different portions of a fine carriage and assemble these into one finished product will always be better paid than the men who cut the timber and hauled it to mill.

The farmer is at a further disadvantage in that the products of his labor are especially subject to instability of price. This is due to the fact that he is largely engaged in the production of commodities which have in general no utility save in satisfying the demand for food; and for such products the demand is relatively inelastic. Hence, a sudden increase or decrease in the supply of farm products causes a relatively great fluctuation in price.

As an offset to the disadvantages under which the farmer labors as compared with those who are engaged in urban industries, there are certain particulars in which his condition is better than theirs. In the first place, he has more generally succeeded in securing for himself a home and a small capital than the men of other industrial classes. Of farm proprietors under twenty-five years of age, 32 per cent are owners, and the percentage increases with age up to 83 per cent for owners of sixty years of age and over. Of home proprietors less than twenty-five years of age, only 13 per cent own their homes, and the percentage increases without interruption to 57 per cent for owners of sixty years of age and over. Of all farm families,

65 per cent own their homes, while but 36 per cent of the homes in towns and cities are owned by the occupants. It is true that the opportunities to acquire a vast fortune are greater in the cities than in the country, but it should not be overlooked that these opportunities are relatively few, and that rural wealth is not marked by that inequality of distribution so characteristic of urban wealth. Notwithstanding the more rapid increase of the latter, it is probable that on an average the farmer of the United States ends his days in a better financial condition than he would have attained had he begun his industrial career in the city rather than in the country.

Home ownership, however, is not always a trustworthy criterion of the relative well-being of classes. There is in the cities a considerable class who do not generally own their homes, but who are far above the farmers in material prosperity. It is not, however, with this class that the farmers are naturally compared, but with that great majority who work for wages or for small salaries. Here again the test of home ownership is illusory, for, owing to the uncertainty of tenure in employment among the wage-earning class, the inducement to home ownership is far weaker than among farmers. But in this very fact appears the more desirable position of the latter; since they have — what the wages class lacks — a controlling voice in determining the conditions under which they labor.

Again, the farmer is less disastrously affected than others by panics and commercial depressions. Three reasons may be assigned in explanation of this. In the first place, the products of the farm are largely articles of absolute necessity. However much the masses of the people, in times of economic pressure, may dispense with the comforts of life, the demand for food remains relatively constant. Consequently, during times of economic disturbance the prices which farm products command are less unfavorably affected than those of many other classes of commodities. In the second place, in the words of a high authority, "farmers deal on a cash basis to a larger extent than most producers. The main trouble in panic times is that those who have relied largely upon credit find their credit withdrawn or largely

curtailed. Naturally such a state of things does not affect so seriously the class that, more than any other, is accustomed to pay and receive cash."

Finally, the farmer sells less of what he produces and buys less of what he consumes than many other classes in industrial society. No part of the services of the laborer, for example, is capable of ministering to his material well-being till sold, and the commodities that are adapted to his wants are bought in exchange. The farmer is also less under the necessity of realizing immediately on his labor than is the worker in cities. The efforts of the former crystallize to a large extent into nonperishable products, while the services of the latter must be sold day by day or lost forever. The well-being of the farmer is thus not so dependent upon general economic conditions, and he therefore feels less keenly the disturbance which a panic or commercial depression creates in industrial society.

The economic basis for the existing discontent among the agricultural classes may now be summarized as follows:

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The industry of the farmer, especially in some of the Western states, has in many cases been overcome by crop disasters, and those ambitious to acquire homes have been defeated by unfavorable weather.

The sharp and unexpected fall in prices of many farm staples since 1891, which it has been impossible to meet by lowering the cost of production, have inflicted serious losses upon the producer.

These conditions have made more difficult the payment of interest charges and mortgage debts, have increased the relative number of mortgage foreclosures, have prolonged the period required for tenants to rise to land ownership, have caused the expense for hired labor to be a greater drain upon the resources of the farm, have made the inequitable burden imposed upon the farmer by the general property tax more difficult to carry, have increased the strain of maintaining a higher standard of living, and have rendered less endurable the tyranny of railway discriminations and the exactions of trusts. Furthermore, since

the great mass of farmers, after starting in life with no other resources than an abundance of energy and a willingness to work, have attained only very modest incomes, any losses to which they have been subjected have been more keenly felt than if they had been possessed of more abundant means.

Our study has thus far been occupied with the economic basis of the farmer's discontent. A satisfactory result, however, requires an appreciation of the far more subtle influences that produce the general condition of restlessness in nineteenth-century society. On final analysis much of the social unrest of the age springs from a longing in the human breast for development, from dissatisfaction with any condition or station in life, however comfortable or luxurious, that offers no chance to rise, no opportunity to progress. "Man is by nature a discontented animal. Satisfy one of his desires and forthwith he feels the sting of another." In short, the ideal of a progressive society, which so thoroughly possesses the Western mind, is in no small degree responsible for social discontent. This ideal has been strengthened by the enormous strides society has taken, within the memory of men now living, through the modern development of transportation and communication.

The civilizations of the Orient, which rest satisfied with the institutions handed down by tradition, whose ideal is that of a static social condition equally good for all time, do not have social agitations. The difference between the static civilizations of the Orient and the dynamic society of the Occident is, it is true, the difference between social contentment and social unrest; but in the former the masses are content with a degraded state of equality, while in the latter unrest is the mainspring of their progress. Professor Gunton has said:

> If the English in India could make the Hindoo laborer want more things, they could soon civilize him up to their own standard. If the Russian peasants were not content with so little, the development of Russia might run on at equal speed with that of the United States. If our Indians could only be made to want houses and steam machinery and good clothes enough to work for them, the Indian problem would solve itself in a single decade.

The contented state of the Oriental mind is what renders any amelioration of Eastern civilizations such a hopeless task.

"The Hindoo having, as he generally has, sufficient for the day, is happy, content to sleep, and is hardly to be urged to greater work by the offer of greater earnings. 'I have enough; why should I work for more?' is not an unusual answer, and the offer of a higher place is often refused lest it should involve more effort."

If progress is better than stagnation, so is Western unrest better than Eastern contentment.

The idea of a progressive society is reënforced by other forces productive of discontent. Among these is the belief in the unequal distribution of wealth. It is said that 4047 millionaires of the United States own 20 per cent of the wealth; that 9 per cent of the families, including the millionaires, own 71 per cent; and that "as little as 5 per cent of the nation's wealth is owned by 52 per cent of the families." Few contemplate with entire satisfaction such statements as these, and, whatever may be their import, they create a feeling of uneasiness among the masses of the people. The spirit of modern times is prone to inquire whether society has a sufficient guarantee that the concentrated ownership of the nation's wealth will be used in such a way as to minister to the well-being of the people; and the frequency with which the interests of the public are disregarded by trusts and corporations keeps alive the fires of the social discontent.

This attitude of mind is doubtless somewhat tinged with the "complaint that every man who is compelled to walk has against the man who rides, . . . the complaint of him who has nothing against him who has something and of him who has something against him who has more." Moreover, "it is no difficult thing to make the world believe it has been misused"; and there is consequently a great deal of unrest inspired by a feeling of social injustice that either has no foundation or rests upon a misinterpretation of events. The willful distortion of facts and the diffusion of misinformation among the people by newspapers intent only on partisan ends, and by politicians who value their reputations for veracity less than they do their loyalty to party and their claims to office, are in large part responsible for this. But propositions which rest upon falsehood are none the less potent in arousing

the indignation of those who believe them than are those which rest upon truth.

The spirit of democracy also lies at the basis of much of the unrest of our age. By democracy is here meant "the natural wish of a people to have a hand, if need be a controlling hand, in the management of their own affairs"; an attitude of the public mind which makes "itself generally disagreeable by asking the Powers that Be at the most inconvenient moment whether they are the powers that ought to be." "Formerly the immense majority of men — our brothers — knew only their sufferings, their wants and their desires. They are beginning now to know their opportunity and their power." A people looking upon itself as the source of authority, conscious of its power and confident in its own wisdom, is a fertile soil for the seed of social uneasiness to grow in. Such a spirit is especially characteristic of the United States, where territorial expansion and marvelous social and material development have favored the feeling of national self-sufficiency. "Men are even more eager than in Europe to hasten to the ends they desire, even more impatient of the delays which a reliance on natural forces involves, even more sensitive to the wretchedness of their fellows and to the mischiefs which vice and ignorance breed."

A fundamental change in the attitude of men's minds towards life is another primary fact in the restlessness of modern times. For centuries a spirit of other-worldliness gave character to all mental activity, and controlled the conduct of society.

> Humanity . . . passed . . . intent on the terrors of sin, death, and judgment, along the highways of the world, and scarcely knew that they were sight-worthy, or that life is a blessing. Beauty is a snare, pleasure a sin, the world a fleeting show, man fallen and lost, death the only certainty, . . . abstinence and mortification the only safe rules of life.

To men living in the gloomy presence of such thoughts, the conditions of life here were of little importance. "For the poor there was no physician; for the dying, the monk and his crucifix. The aim was to smooth the sufferer's passage to the next world, not to save him for this." In marked contrast is the attitude of the thinker of today. How to render existence in this world more tolerable, how to realize an ideal social state, is the aim of the

modern reformer. "The general appearance of comfort and well-being almost everywhere . . . indicates a disposition to live for the present rather than to sacrifice the present to the future." The masses are seized with a passion for the enjoyment of the material comforts of life, and it no longer suffices simply to commend to them the virtues of patience and forbearance. This revolution in the thinking and conduct of men has undoubtedly contributed greatly to the disquietude of the age.

Hand in hand with the growth of democracy and a spirit of this-worldliness, the rationalistic tendencies of mankind have become stronger. The spirit of inquiry is being scrupulously applied to every phase of life. "Truth for authority and not authority for truth" is the spirit of the age. The tendency is to discard that which will not stand the test of reason, and with the growing intelligence of man this tendency has become more and more marked. Obviously, a society permeated with this spirit is destined to be in a continual state of ferment.

Nor should the important rôle played by modern means of communication be overlooked. Never before were all the various facilities for interchange of thought so efficient and abundant. But for this fact the democratic and rationalistic spirits and all the factors productive of discontent would be largely stripped of their power. No one who has an idea to express need lack a vehicle in which to convey it to the world. Every phase and condition of life is reflected daily in the press. Much of modern discontent is due to a desire for improvement, and without a knowledge of present conditions this desire can have no intelligent basis. The explanation of much of the unrest of the age, therefore, is not that social conditions are inferior to what they formerly were, but that the public, through the medium of the telephone, the telegraph, and the printing press, is made acquainted with the terms of existence which everywhere obtain.

As to American life in particular, the unrest so characteristic of it is in part due to the very wholesomeness of social and economic conditions. Probably in no other country is society in so much of a flux, or the mobility of the individual units so marked. There is a constant movement going on from below upward and

from above downward. Each man, no matter into how humble a condition born, has a chance, and knows he has a chance, of rising; and where he will be found later on in life cannot be predicted from the status of his birth. These conditions, however, give rise to hopes, involve the possibility of disappointment, and, therefore, contain within themselves the germs of discontent.

Moreover, the energies of the nation have been absorbed for more than a generation in industrial expansion. Material development has been so sudden, the industrial activities and relationships of men have so greatly enlarged, that problems of an economic character have arisen more rapidly than they have been solved. The process of redefining the rights of individuals in their new relationships, of adjusting the legal framework of society to corporations, trusts, and all the complex phenomena of modern life, is necessarily slow. Meanwhile, the issues which in times past occupied the public mind have disappeared. Political and religious freedom have been largely attained. The question of slavery was settled a generation ago by an appeal to arms. Men's minds are left free to deal with problems of social and economic import. At the same time the rapid increase of population and a rising standard of living intensify the competitive struggle of life; and whatever influence the public domain may have exercised in lessening the intensity of this struggle is now largely a matter of the past.

The farmer's discontent is in part a manifestation of these general conditions so prevalent in the nineteenth century in all Western civilizations. The wants of the rural population, in common with those of nearly all classes of society, have developed more rapidly than the means of satisfying them. The social requirements and customs of the times demand a larger outlay for dress, amusement, jewelry, travel, education, and even funeral expenses. Owing to the great variety which such classes of wants assume when they are once indulged, the higher standard of living in agricultural communities, far from contributing to contentment of mind, has probably had just the opposite effect. And the more luxurious style of life found in cities, especially the ostentatious display of those who have risen suddenly to wealth, makes the

farmer feel that he is getting less than his share of the good things of life. As Professor Giddings says:

> The isolated farmer and his family have begun to be affected by the strain of modern life in a deplorable way. They are no longer ignorant of the luxuries of the towns and a simple manner of life no longer satisfies them. The house must be remodeled and refurnished; the table must be varied; clothing must be in style; and the horses, carriages, and harnesses must be costly. The impossibility of maintaining this scale of expense under existing agricultural conditions embitters life, and finally, in many cases, destroys the mental balance.

In addition to economic grievances and the disturbing influence of general social development, the nature of the farmer's occupation is such as to contribute to a discontented frame of mind. However much intelligence or skill he may bring to his work, results after all depend largely upon nature. Not infrequently, when every possible precaution has been taken, his hopes are suddenly blasted by an unpropitious change in the weather. It is true that the adverse influence of unfavorable weather is likely to be exaggerated at the time, but it is none the less depressing in its psychological effect. The excessive rainfall or the unwelcome drought of summer, the cutting winds of a rigorous winter, the late frosts of spring or the early frosts of autumn — these are the product of natural forces with which the farmer is largely powerless to cope. In the presence of such phenomena, the most hopeful minds are apt to become depressed and to give expression to feelings of discontent.

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VII. RURAL ORGANIZATION AND MARKETING

AGRICULTURAL SYNDICATES IN FRANCE

By Henry W. Wolff

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IT MAY be a fact of some interest for Americans that the Syndicats Agricoles, which are rightly attracting the attention of agricultural authorities in various parts of the world and promise entirely to revolutionize French rural economy, owe their origin, in the first instance, to an American idea. Count Rocquigny, in the interesting account which he has published of the agricultural associations with which his name has become creditably associated, candidly admits that it was the "Farmers' Alliances" of the United States which first suggested the present form of French agricultural combination to its authors. As it happens, the offspring bids fair to prove of wider and more enduring benefit than the parent. Its past record has been one of truly astounding successes. It has spread as if by magic. In the brief space of barely a decade it has covered all France with a network of organizations ministering to the needs of agriculture in a surprising variety of ways and flourishing almost everywhere. There is not a department now without its Syndicats, — linked together in departmental or, beyond that, in regional "groups," or not, as the spirit of union or of local independence happens to have prompted members, — generally doing good work. In M. Gatellier's words, the syndicates have "democratized" the use of feeding stuffs, artificial manures, and improved agricultural implements, increasing the consumption of manures alone

from a poor 52,000,000 francs to 120,000,000, which promises a great increase in the near future, while reducing the current prices by from 20 to 30 per cent and substituting a genuine article for one very much adulterated. They are diffusing agricultural education, improving cultivation, and — greatest benefit of all — they are teaching the value of independent thought and independent action to the French peasant, whose one distinctive fault heretofore has been the want of "private initiative," and schooling him to rely upon himself, and the assistance which by exchange he can secure from his neighbors, rather than on the questionable benefit of State help.

Count Rocquigny's book explains all the various methods employed, and presents, indeed, a highly attractive picture of syndicate work accomplished, in which it would not be possible to point out any one line which runs counter to truth. But to the eye of one who has seen the syndicates actually at work the picture appears a little wanting in clearness, owing to something of a false perspective, arising from a failure to indicate the precise proportion between the measure of success actually attained on different portions of the ground covered. This is easily explained by the fact that the count is writing far more with a view to incite his own countrymen to syndicatist action than merely to enlighten foreigners as to what has been accomplished. But to foreigners the caution is necessary.

The Syndicats began with a most ambitious programme. The Socialists had made inconvenient headway in some specifically agricultural departments of Central France. Laborers' unions had been formed, strikes were being organized, piecework was being protested against. To meet such organizations on their own ground and prevent the formation of more, Professor Tanviray and his friends opposed to the "class" syndicates, consisting of workingmen only, their new "mixed" syndicates, composed both of small folk and of large landowners. And they declared fierce war against "Socialism," which war, even from their own point of view, appears to have been carried a trifle too far. Indeed, one whole "part" of Count Rocquigny's book is taken up with arguments against Socialism. The Syndicats wanted to build

up as well as pull down. By their professors teaching technical knowledge, by their laboratories and their monthly publications, — the prized Bulletin, which in most districts has had a decided success, — by the prize competitions organized, — the prizes offered for better cultivation, for the construction of liquid-manure tanks, for the use of perfected implements, — by the advice freely given on the use of artificial manures, and by similar action, the syndicates have become one of the most serviceable agents of technical education in France. Beyond that they proposed effectively to defend agricultural interests on the political battlefield. And in one instance, at the general election of 1889, the Syndicat Économique Agricole of Paris really was fortunate enough to score a success of this kind, by inducing a majority of the candidates for the new Chamber to accept openly the agricultural programme, — rejection of the proposed commercial treaty with Switzerland, lowering of the railway tariff, and a reduction of the land tax, all which measures have been carried. They also aimed at organizing coöperative sales of agricultural produce, combination for productive purposes, in the shape of coöperative dairies, vintries, and the like.

All this really is on paper the most interesting portion of the work done. One seems to feel from Count Rocquigny's account as if the great problem, the favorite problem with agriculturists of all nations, had at length been solved, and farmers had been taught to become their own salesmen, altogether independent of intermediaries. We read of horses and cider sold by syndicates in Normandy, of a syndicate taking an army contract for straw, and of similar transactions. But, in truth, all this amounts to very little. The practical successes which at all deserve speaking of are on this ground still to come. On the other hand, the syndicates have really been surprisingly successful in their organization of supply coöperation, and, beyond that, in their organization of coöperation for common work, much of which Anglo-Saxon and German farmers accomplish in combination, without resort to a formally constituted union. In France the spirit of combination was before 1883 altogether undeveloped, but the Syndicats must not take all the credit for this success exclusively to themselves.

They have come upon the scene in the very nick of time, and, by the help of very able officers and a good administration, have managed to turn favorable circumstances to excellent account. In truth, however, all France, which previously looked upon coöperation only as a useful handmaid to production, promising to bring emancipation and independence to workingmen, has lately become alive to the value of coöperation of other kinds, more particularly credit and supply. While agricultural syndicates have been organizing, agricultural coöperative supply stores, after the pattern of the London army and navy stores, have been springing up and multiplying in towns; and in the south of France coöperative people's banks have become a recognized source of popular credit. Coöperative associations are now multiplying apace; and the official account of the growth of coöperation in its various aspects, which is in slow course of preparation in the Rue de Grenelle, promises to prove a most interesting publication. But, unquestionably, the Syndicats have managed to guide and swell this general current beyond anything which could have been anticipated.

The Syndicat movement, in fact, represents one of the most beneficently effective social or economic movements which France has seen for many a year. And its possibilities, as M. Brelay puts it, altogether defy measuring. This is the more surprising, since the act of 1884, which forms the constitutional charter of Syndicats, deliberately places hindrances in the way of these institutions, and makes it difficult for them to transact business. Hence those rather cumbrous methods of sale and purchase, which there is no space here to describe, and which Count Rocquigny admits to be roundabout and troublesome. Hence, also, the curious classification of members, which seems so wholly opposed to the democratic idea, and which one can scarcely expect to see maintained long in republican France, though up to the present no serious inconveniences appear to have risen. There are *membres fondateurs*—rich men paying heavy subscriptions and pledging themselves for a fixed term of perhaps five years—and *membres effectifs*—poor cultivators, who pay a small subscription and are free to come and go. It is the latter mainly

who are intended to derive any benefit; and in the very few credit syndicates thus far formed it is they alone who do so. The rich men are patrons. Possibly that mode of organization was inevitable, but it is obviously open to objection. It does not represent the purest form of self-help. However this may be, it is impossible not to admire the great good which these institutions have done to French agriculture when one sees it. And one cannot help thinking that from coöperation practised in so striking a variety of forms — coöperation not only in every description of supply and of insurance but also in such work as draining and embanking, fumigation to repel the frost from vineyards, exterminating noxious insects, buying implements for common use, from large steam threshing-machines down to the smallest tools; coöperation for blending vines from different departments, for arbitration, for settling the proper customs as between incoming and outgoing tenants, and many things more — agriculturists in other countries ought to be able to learn something, even though for the ordinary purchase of goods they do not require a new form of association.

RELATION OF JOBBERS AND COMMISSION MEN TO THE HANDLING OF PRODUCE

By C. W. Thompson, Investigator, Rural Organization Service, United States Department of Agriculture

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SO LONG as each locality produces its own food supply, the problem of distribution is very simple. Either there is no distribution at all, viz. each consumer produces his own supply, or there is direct sale by producer to consumer as in the old-time fairs, or there is at most a local merchant who acts as an intermediary. A jobber or commission man does not fit into such a simple local economy, and this explains the absence of such middlemen until about the beginning of the eighteenth century.

It is only as economic changes tend to broaden markets beyond the producing localities that the need for a larger distributive machinery arises. Such a widening of the market along geographical lines was a characteristic change during the eighteenth and nineteenth centuries, mainly as a result of improvements in canal and railway transportation. A still further widening of the market has taken place during the last three or four decades, mainly as a result of improved means of refrigeration, but the latter extension of the market has been one of time rather than of space.

That the widening of markets, made possible through improved transportation and refrigeration, is desirable will scarcely be questioned by those who are conversant with the limitations and instability of conditions under the early local economy as contrasted with the variety in supply and the greater stability in prices of the larger markets. The form of distributive machinery that is best adapted to the needs of the enlarged markets is, however, not so clear.

It is the purpose of this paper to explain the relation of the commission man and jobber to the handling of produce in the enlarged markets of to-day, and to discuss some of the problems that have arisen in connection therewith. By commission man is meant an agent stationed at a primary market for the purpose of receiving consignments from shippers at a distance and disposing of the same at a stipulated rate of commission on the selling price. The term "jobber" is used to apply to those dealers in the primary markets who buy outright from shippers at a distance, either through travelling agents or according to mailed quotations, and who sell to retail agencies or to other jobbers in the same or in other primary markets.

A survey of the agencies handling produce in our primary markets twenty or thirty years ago discloses very few jobbers. Practically the whole field was held by the commission man. It was he who acted as the sole intermediary between the local shippers and the retail agencies of the cities during the initial widening of the market. The advent of the jobber into this line of business came at a later date.

To understand why the commission man rather than the jobber first entered the primary market in the handling of farm produce we must bear in mind the degree of hazard which was then involved in such business. The fact is that no one cared to buy farm produce outright from distant shippers because of the risks involved. The only kind of business which then attracted men was that of an agent who could command a commission in proportion to the amount of produce handled, without incurring at the same time any liability regarding the quality or safety of the product. This meant that all risks involved had to be borne by the local shipper.

An explanation of the factors contributing to those early risks requires the enumeration of a number of hazards. In the first place, the physical condition of the produce as it left the various farms was a matter of great uncertainty. Farmers had only the vaguest knowledge as to the demands of the market and would mingle produce of various grades and of various stages of ripeness or unripeness. The method of packing was equally

unsystematic. The country merchant added poor handling and additional delay to the movement of the produce, while the train equipment, and slow movement of freight generally, rendered extremely doubtful the quality of that portion of the produce which eventually reached the primary market.

Then, too, there were grave moral hazards as well. Anyone familiar with this line of work could not fail to be impressed with the general lack of a sense of business integrity on the part of both the producer and the local shipper. Assurance might be given of the shipment of produce of high-grade quality, while the distinguishing characteristic of the returns would be oftentimes an utter lack of such quality.

The lack of a moral business sense on the part of the producer or local shipper was not only equalled but greatly exceeded by that of the average commission man handling the produce in the primary markets. However, it is only as we realize the peculiar position he occupied that we can appreciate the practices usually attributed to him.

The commission man was far enough away from his principal to feel reasonably free from surveillance of any sort. He could report account sales on initial shipments so as to indicate big returns and, having thus gained the confidence of shippers for further business, juggle the returns on large consignments to his own pecuniary advantage. It would naturally be his endeavor to handle as big a volume of produce as possible, regardless of the care given to it, inasmuch as his own income varied with the amount of the traffic. There was similarly an inducement for him to spread his own margin of gain beyond the nominal rate of commission by reporting the sale of produce at grades lower than those actually secured or by reporting sales at current prices when actual receipts involved an additional premium.

Such a system placed the local shippers at a grave disadvantage, of course. They were represented at a distance by men whom they did not know and in transactions they could not scrutinize. Fortunately for them another avenue through the primary markets eventually opened up. This came with the advent of the jobber.

It was, however, only after changes had made possible the

movement of produce with care and dispatch between local sources of supply and the central distributing points that the jobber was induced to enter the field and buy outright. Previously, the extent of the risk involved had rendered it seemingly impracticable to open up a jobbers' avenue of trade through the primary market.

The earliest attempts at buying produce outright from primary markets were made by men who actually entered the local sources of supply and made purchases from local shippers. These field men would handle a variety of produce, some for purchase and some for sale.

Because of the limited amount of each kind of produce handled it was necessary to distribute the field man's expenses over a variety of both purchases and sales in order to carry on the business successfully. Only after a personal knowledge of the character of the local shipper had been gained and after the produce itself had been standardized so as to be identified with well-known grades, could the buying through field men be supplemented by purchases through mailed quotations or through calls by telephone or telegraph. Even then, however, the use of actual field service continued to be employed in order to secure or hold trade in competition with other agencies in the same line of business. The specialized form of field work where men devote their buying to some single product, as in the case of the modern strawberry man, is a comparatively recent development and is limited to products subject to a high degree of localization and specialization.

In another respect, too, from the standpoint of the local shipper, the jobber's avenue of trade presented an important contrast to the older route, that via the commission man. Instead of the assumption of risks incident to consignments on commission, the local shipper naturally preferred the security of actual sales. The result was a gradual displacement of commission business by that of jobbing wherever the latter found conditions for buying suitable. This change took place partly by the entry of new men into the jobbing field, but often by a change in methods of doing business from commission to that of jobbing.

While a considerable number of produce men who began buying on a commission basis took up jobbing later, it was not

uncommon to find a combination of both methods employed by the same firm. Dealers might handle certain lines on commission and buy other produce outright. Again a given commodity might be bought and sold in job lots at certain times and be taken in only on a commission basis later under different conditions. Such combinations of commission and jobbing business are still a common practice in all our leading trade centers.

The most important influence directing changes between the commission and jobbing methods of doing business is the movement of prices. Thus, during a period of uniform or rising prices the jobbing business is encouraged, whereas the conditions of over-supply leading to falling prices so far increase risks as to discourage jobbing and induce the dealer to accept shipments only on a commission basis.

Nevertheless, jobbing has so far become established now in the produce business as to make it the rule, and commission buying the exception, in the handling of perishable products at our leading primary markets. The extent to which the jobber has displaced the commission man is more noticeable in Chicago and the twin cities than it is in New York City. The main explanation for this will be appreciated more fully after we have discussed the problems connected with the handling of surplus stock. At this time it is sufficient to state that the mere size of the New York market, enabling it to absorb large shipments at a relatively small change in prices, makes it seem the least risky place to consign produce that must be sent on commission. It should also be noted that where jobbing and commission business exist side by side in the same market the latter is now practically confined to the lower grades of produce.

Not only has jobbing increased as compared with commission business but competition among jobbers in the buying field has become very keen and has led to peculiar developments along certain lines. Thus, in the case of butter we have an interesting situation revealed in connection with the practices of the recent butter board at Elgin. The tendency of that board to publish prices below those at which sales were actually made naturally aroused the indignation of the public. Nevertheless, the exact

reason for such a procedure can only be understood in connection with the buying practices of the jobbing houses. Competition in securing or holding trade from local shippers had gradually led jobbers to offer premiums in the purchase of butter, such premiums to consist of a given margin above the Elgin quotations. The thought of getting a premium above market prices was, of course, attractive to local creameries, since it enabled them to make a good showing on the quality of the butter. To the extent that the same jobbers could have the market quotations as determined upon by their own board at Elgin appear lower than actual sales warranted, the offering of premiums was an easy matter. However, after action was later taken by the courts against the practice of the butter board, leading to a dropping of official quotations and to the publication of actual sales on the street, the practice of offering local shippers an apparent bonus over the market price has had to be modified accordingly.

Thus far our discussion of jobbing has centered mainly on the relation of the jobber to the source of supply. Attention will now be given more particularly to the selling activity of the jobber.

Two sets of problems confront these middleman agencies in the sale of their produce: (1) the disposition of regular supplies through a more or less well-developed trade, and (2) the unloading of additional amounts of produce at times of a surplus.

To meet the demands of regular buyers it is oftentimes necessary to work over the produce in order to put it in a condition that will appeal to the trade. It is also necessary to deliver the goods in the desired amount at the time and place it is wanted.

Relatively little attention was given by commission men twenty or thirty years ago to the work of sorting and repacking produce. The tendency was to pass it on to city retailers in much the same condition it was received by the commission man. This meant that the retail agencies were called upon to do whatever sorting or packing was demanded by the consumer.

In order to get the trade of the city retail agencies and to take advantage of the better prices which go with standardized goods, the jobbers soon took up the work of sorting and repacking. Wherever a gradual improvement has taken place in the quality

of shipments from sources of supply the margin of gain from this kind of work necessarily becomes less. The amount of work of this kind, however, which still must be done on produce as it passes through the hands of jobbers, represents an appreciable part of the cost to the consumer. Any attempt to explain the middleman's margin must not overlook the items of cost arising in this way.

When the jobber sells to retail agencies he must also deliver the produce in desired amounts and at the time and the place it is wanted. Accordingly such jobbers must be equipped with a suitable delivery service. Here, again, competition between jobbers has involved a comparative test in the quality of service rendered. The horse and wagon were the usual equipment for many years but have rapidly been displaced by the motor-truck. The use of the latter by certain firms practically compels its use by all the competitors. One of the most sweeping changes in recent years among wholesale and jobbing houses at the various primary markets is that of the displacement of the horse and wagon by the motor-truck.

The jobber's task of disposing of surplus stock introduces a number of problems. He must find a way of unloading certain supplies within his own primary market because the condition of the produce will not permit its movement to other centers of trade. On the other hand, wherever a given primary market is overstocked as compared with others, he directs his shipments so as to equalize conditions of supply in the distributing centers so far as such movement is practicable. Let us first consider the situation within a given primary market.

The demand from jobbers through the regular retail agencies varies considerably. This may be due to the uncertain manner in which the retailer distributes his wholesale orders. More generally it is due to the variations in purchases from retail stock by the consumer. Only one illustration of the latter is sufficient to emphasize this. If the weather is attractive and housewives venture forth in large numbers so as to see the produce for sale at the various retail agencies, the latter can count on an unusually heavy demand for such goods. On the other hand, if weather

conditions suddenly become unfavorable, thus tending to keep a great many customers at home, much less than even the ordinary demand is reflected in the sales of the retailer. While such a reaction on the business of any retailer may not seem of very great moment, the combined effect of such variations in all the retail agencies drawing on the supplies of a given jobbing firm means considerable variation in the business of the latter agency. This shows one way in which the problem of unloading a surplus is presented to the jobber.

Then, again, the sources of supply are even still more the source of variability. This is partly explained in the relative instability of business practices by local shippers in handling produce and partly due to the seasonal variation in production itself at sources within reach of the jobber's trade.

The variations thus noted both in demand and supply show the need of some outlet for surplus stock. Assuming shipments to other primary markets impracticable, the jobber may partly satisfy this need by exchanges with other jobbers in his own center of trade. He may also unload on certain agencies other than the regularly established retail stores.

Formerly, the street peddler served the latter purpose to a large extent. By bringing his goods out into the consumers' territory it was possible to create a demand for produce beyond what would have been effective through the retail stores alone. At the same time, it is true that the peddler's business consisted partly in a displacement of the retailer's trade.

One of the noticeable changes in the city distributive machinery, especially during the past decade, is a remarkable falling off in peddlers' business as it relates to the handling of produce. This change is doubtless due mainly to modifications in the wants of consumers themselves. The housewife who once was alert to the traffic of the street-vendor has largely become oblivious to his movements, either because the exposure or quality of the peddlers' wares no longer appeals to her or because the orders by telephone or through the retailer's delivery service seem more in keeping with her social status.

With the passing of the produce peddler, the unloading of surplus stock by jobbers has had to be augmented in other ways. No doubt the advent of the chain stores and the produce branch of department stores has aided in this, while at the same time increasing the regular trade. Moreover, the growing practice among the retail stores themselves of using their delivery service in soliciting orders and in calling especial attention to stocks they are anxious to move promptly has greatly increased the elasticity in demand placed upon jobbers by the retail trade.

Thus far the problem of unloading a surplus within a given primary market has assumed a high degree of perishability in the produce, making necessary its immediate movement into the field of consumption. As a matter of fact, the most important development in the handling of produce during the last three decades has come through improvements in the art of refrigeration and a consequent lengthening of the period that perishable products may be held in the channels of distribution before going to the consumer. Moreover, such storing of foodstuffs has furnished the most effective means of solving the problem connected with the handling of the surplus.

It is natural, therefore, that jobbers should be actively interested in the progress of refrigeration as applied to products they handle. Anyone present at the sessions of the International Congress on Refrigeration held in Chicago in September, 1913, could not fail to observe the interest taken by jobbers in the deliberations of that body. Among the most intelligent questions asked regarding the technique of refrigeration processes or regarding the proper physical and chemical condition of produce to be placed in refrigeration were those from men actively engaged in the jobbing business.

For most of the fruits and vegetables handled by jobbers the season of production in the source of supply is but a minor fraction of the period of time during which jobbers are called upon to supply the same to the retail trade. Holding goods in cold storage has thus become a necessary part of their business. It means that they must render available during seasons of scarcity

the amounts of produce sufficient to meet the consumers' demands, and for this purpose they must anticipate prospective needs during periods of plenty and build up reserves accordingly. To do so successfully they must be able to unload later at an advance in price sufficient to cover additional costs for rent, interest and insurance as well as a margin of return for the risks incurred.

The risk feature becomes magnified when we remember the large number of agencies storing produce independently with only a vague knowledge of the actual supply held over for the future market. Not only is the amount in storage unknown but the various contingencies affecting the time and amount of additional future supplies are always a matter of grave uncertainty. The last-named difficulty was clearly exemplified during the winter of 1913 in connection with the storage of eggs. Unusually mild weather early in the winter had suddenly augmented fresh supplies, rendering exceedingly problematical the unloading of storage eggs whose supply under normal conditions would not have been excessive. Although jobbers began to cut prices, relying on elasticity of demand to remove the stored goods with sufficient dispatch, the retail agencies were more tardy in reducing their figures because of an unwillingness to sell at a loss. This explains why certain jobbers were ready to make terms with other avenues of sale, such as that created by women's clubs in some of our leading markets.

Where jobbers dispose of their surplus by placing it in cold storage they are confronted with the need of setting aside the amount of capital represented by the stored goods. Few jobbers command the necessary money without resorting to borrowing. The usual course in this connection has been a resort to loans at the banks. However, the rise of large storage companies with superior facilities for credit has introduced important changes in this respect.

Jobbers in the leading primary markets now often secure loans directly from storage firms, who in turn arrange loans at lower rates with the banks. Similarly, in securing the protection of insurance on the stored goods, jobbers find it advantageous to

get their insurance from the same storage firm, which is enabled to take out at less cost with an insurance company a large and long-time blanket policy sufficient to cover all the policy risks assumed for jobbers.

The discussion thus far has concerned the handling of a surplus more or less restricted in its use to a given primary market. However, the application of modern means of refrigeration to the handling of produce in transit has greatly facilitated the movement of such surplus stock between the various primary markets as well, until we now have nearly a nation-wide movement of most of our fruits and vegetables.

This wider movement of surplus stock cannot be undertaken by jobbers without the use of facilities involving great increase in expense. It is necessary to know from day to day the supply conditions of each of the primary markets, and this alone involves an outlay for telephone and telegraph expenses, the fixed charge of which it is impracticable to incur unless the jobber conducts his shipments between the primary markets on a sufficiently large scale. Then, too, this wider movement necessitates a knowledge of freight schedules and rates and of commercial practices that do not concern the dealer who limits his attention to a given trade center.

Our discussion has revealed the complexity of services devolving upon the middleman agencies in our modern distributive system. If the cost is to be reduced, such services must either be partly or wholly eliminated through changes in the wants of consumers or they must be rendered more efficiently either through other agencies or through some regulation of existing agencies.

Instead of passing produce through so many hands on its way from the producer to the consumer, some believe that a more direct route could be devised. It is generally conceded that the individuals performing the aforesaid middleman functions have not revealed any conspicuous affluence in wealth. At the same time many have come to regard the machinery as too cumbersome and expensive. An actual increase in the use of direct shipments recently from local sources of supply to the retail agencies in the cities and even to the consumers themselves has

invited added interest in the possibility of a further extension of direct shipments.

The use of direct shipments implies, however, that the produce in question is graded according to quality so that it can be designated and bargained for without previous inspection. This means that the functions of sorting and packing as they are performed by jobbers or city merchants must be undertaken and carried out in a satisfactory way by producers or local shippers.

Direct shipment also implies that information is at hand so that buyers and sellers of a given kind of produce may be able to find each other and agree upon conditions of sale. In order to render information available so as to bring buyers and sellers together, some states such as Kansas and South Carolina have appointed state officials who are expected to act as clearing houses of information for this purpose. Generally, however, the producer or local shipper is left to build up his own direct trade in the cities by furnishing such quality and service as to command a special demand for his produce, or the city retailer must find such local shippers. However, the building up of such trade also implies that the necessary confidence exists between the buyer and seller in matters pertaining to the sale.

Again, direct shipment implies the availability of suitable and practicable shipping facilities. The present system of differential freight rates giving special rates in carload shipments is financially profitable from the standpoint of railway economy and is favorable to the indirect jobbing method of handling produce. On the other hand, the relatively high level of express charges has not given encouragement to any appreciable amount of direct shipment of produce. The most momentous change recently in this direction is the extension of the parcels post. Already there has been a rapid increase in the movement of parcels on terms such as to greatly facilitate the direct shipment of produce.

However, having given all the above-mentioned requirements, direct shipment also implies a willingness on the part of both seller and buyer to give attention to all the necessary details of such a system. This assumes vastly more than the great body of either producers or consumers have shown themselves willing.

to undertake. While, therefore, we may doubtless look for a noticeable extension in the use of direct shipments, such extension is not likely to be carried beyond a minor fraction of the business as a whole.

An important reason for such limitations lies in the fact that the direct method of shipment has not as yet dealt successfully with the problem of handling surplus stock. On the other hand, the very agencies using the direct method of shipment have had to resort to the use of the indirect jobbing or commission system in dealing with a surplus.

While shipments direct from producers to consumers are likely to continue to cover a minor fraction of the total trade, the usefulness of such a system is not limited to the portion thus handled. A most important influence will be exerted in a sort of a regulative way on the methods of jobbers and commission men. In other words, the danger of a control of the supply by middlemen will be greatly minimized through the potential competition of a direct method of shipment.

While the limitations of the system of direct shipments have thus been discussed in order to indicate more clearly the relation of jobbers and commission men to the handling of produce, it is interesting to notice how the organization of certain producers themselves for marketing purposes has enabled them to do a part of their own jobbing. The most notable example of this kind is that of the citrus fruit growers. Even these, however, with their highly perfected form of organization find it necessary to make use of the existing middleman machinery at the various primary markets.

Finally, assuming the limitations of the direct method of shipments including that of the extension of producers' and consumers' organizations, will the commission and jobbing agencies render efficient service without any other checks than those of active and potential competition? That something more is necessary is implied to the extent that public regulation has been applied to the business of these middlemen. Such regulation has been applied in two ways. In the case of the commission business, state regulation has been provided in some instances, as

in Minnesota and New York, compelling commission merchants to be licensed and bonded and subjecting their accounts to inspection by state officials in case of complaint from local shippers. The problem suggested in this connection is whether it is desirable and practicable to extend the regulation of commission business so that the accounts of such firms are inspected regularly in some such manner as that applied to banking institutions. The same problem arises in connection with the storing of surplus stock by jobbing or other agencies. In the latter case the public interest is affected not only by the possibility of abuses such as the misrepresentation of storage goods as if they were fresh, but also by the extent to which a concentration of surplus stock may lead to a control of the supply.

STUDIES IN EGG-MARKETING

By C. W. Thompson

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SUMMARY

COUNTRY merchants were unable to reach the primary markets through any other avenue than that of the commission man so long as the conditions of shipment involved great hazard.

As improvements in transportation and refrigerator service diminished the risks of handling, jobbers found inducement to enter the primary markets and buy outright from local country dealers.

The growth of jobbing has now practically displaced the handling of eggs on commission in all Western primary markets except during periods of falling prices.

In recent years certain localities have developed a system of marketing eggs directly to city retailers without the aid of middlemen. The success of such direct shipments has been mainly conditioned upon the ability to create and maintain a special market for high-grade quality.

While the net margin on which jobbing is being done is only one-third or one-fourth of what it was ten or fifteen years ago, the gross margin has been kept unnecessarily large because of losses in candling, sorting, and repacking — mainly due to the "case-count" policy of purchasing eggs in the local towns. On the other hand, the cost of storing has been reduced through economies from increased volume of business, especially by a saving on loans and insurance.

Cold storage lessens fluctuations in prices at different seasons and renders a high-class product available to consumers during

periods of scarcity. At the same time it suggests the danger of a possible control of the market — a danger seemingly less ominous where several channels between producers and consumers are afforded by the direct method.

The evil of selling storage eggs as fresh points to the need of legislation placing public cold-storage plants under government regulation and control.

THE EARLY METHOD OF EGG-MARKETING

The early method of marketing eggs from the farm was to bring them to the country merchant, who received certain farm products in trade for groceries, dry-goods, or other wares for sale in the store. This method proved very helpful to the average farmer under pioneer conditions. Aside from the returns of the grain crop in the fall, there was as a rule no income forthcoming during the different seasons of the year except what could be secured in trade for butter and eggs or the occasional sale of live stock. This advantage was especially apparent during years of partial or complete crop failure resulting from hail, rust, or the ravages of the grasshopper or chinch bug. Many a family in the Northwest has thus seen its cash crop swept away in a few moments and has been forced to tide over to the next season by limiting the expenditures of the household to the meager returns from eggs and butter.

This method of egg-marketing was also helpful to the country merchant because his trade was limited mainly to farmers, and sales had to be made on long-time credit, awaiting the returns of the fall crop. In the event of failure in the fields, it was necessary to extend credit till the following season. Because of the prevalence of long-time credit to the farmer, it was necessary for the merchant to adjust his obligations to the wholesaler or jobber by means of loans from a local bank or with the dealers themselves.

To the extent, however, that farmers brought eggs or butter to the store the merchant had for a time the benefit of almost a cash transaction. The shipment of butter and eggs brought

money returns without appreciable delay. This is an important reason why the country merchant catered to the egg-and-butter trade. Another motive also prompted the merchant to deal in farm products. He soon realized that farmers were prone to make practically all purchases at one store, and that the choice of a store depended mainly upon what the farmer regarded as the best market for his produce.

Competition between merchants for the farmer's trade stimulated them to make as favorable quotations as possible. The merchant gradually became accustomed to this showing on the egg-and-butter business, however, and did not expect any direct gain from this source. To him the great gain was indirect. The merchant was, of course, running the store for the sake of a profit, but he was compelled to regard the handling of eggs not as a business in itself but as a means to other business. Taking in eggs and butter meant selling goods from the store.

It was the sales of merchandise that became the source of profit. The prices charged for different kinds of goods were made so high that the resulting gains brought full return to the merchant for his trouble and risk in handling the farmer's produce. The distribution of these profits among different classes of merchandise had to be made according to "what the traffic would bear." Only a small margin was possible on certain staple articles such as granulated sugar, flour, kerosene, and coffee. The highest percentages of gain were therefore applied at varying rates on other classes of goods the values of which were not so well known to the consumer.

Attention has thus far been called to certain advantages of the early method of egg-marketing both to the farmer and to the country merchant. Such a marketing agency was sufficient in itself to the extent that the local market was large enough for the unloading of the farmer's product. The very existence of this sort of business between the farmer and the merchant on any considerable scale, however, gave rise to the need of a class of dealers elsewhere who could receive shipments of farm produce from the country merchants on practically a cash basis. Recognizing the opportunity afforded by this need, certain men

established themselves at the more important centers of trade for the purpose of handling products such as eggs and butter. What at one time proved to be the most advantageous method of marketing eggs locally both for the farmer and country merchant also offered advantages to a certain class of dealers in the large cities. In other words, the very existence of the kind of egg-marketing made necessary locally because of the status of the early farmer and country merchant also made necessary a certain type of middleman in the leading marts of trade. In order to appreciate the position and function of the middleman agency thus rendered indispensable, it will be necessary to revert to the local communities and analyze more carefully the nature of the handling of poultry and eggs by the farmer and country merchant.

The most striking fact relating to the care of poultry and eggs under the earlier type is the utter lack of attention given to it. During the major portion of the year the flock of chickens was left to take care of itself. In the same way that cattle were allowed to graze over vast stretches of free land with no interruption except that of the annual "round-up," so, too, the chickens of the early farm roamed at will, gathering food wherever their scratching brought results and depositing eggs wherever surroundings suggested a minimum of disturbance. The hennery was a place of last resort, sought out as the seat of refuge against the invasion of wild animals or inclement weather. From fall until spring the accumulation of filth often went on unabated. In places momentary relief may have been afforded by a covering of straw. The situation as a whole, however, is not inaccurately reflected by saying that frontier farmers rarely took the time to clean their chicken houses. In such a place, with poor ventilation and poor light, the fowls were huddled together, pending the cold season, and handed a ration of feed the quantity and quality of which were determined by the "leavings" conveniently at hand and unfit for other uses rather than by the needs of the poultry. The limited attention given to the care of poultry devolved upon those who presumably had time to spare. It was not regarded as a man's job, but was usually left to the

housewife or children. The time for gathering eggs was usually determined according to the needs of the household, and then it was often sufficient to bring enough eggs for the purpose in hand. A thorough search covering all the premises was generally left as an important part of the preparation for a trip to town.

At such irregular times as it was deemed convenient to go to the local market the egg basket was taken along. The exposure *en route* varied with the season of the year. By far the larger portion of eggs was sold during the spring and summer months, however, and little or no thought was given to the care of eggs on the road except precautions to prevent breakage.

The country merchant received the eggs in bulk at a flat rate per dozen. According to this method "an egg was an egg," and one dozen was treated on a par with another. One farmer might be methodical in his habits, gathering his eggs with regularity and bringing them to town at certain intervals. Another farmer might be entirely devoid of method, coming to town at uncertain intervals and bringing eggs the quantity and quality of which would be equally uncertain.

Aside from the small volume of eggs sold locally, no attempt whatever was made by the merchant to distinguish between the different lots of eggs prepared for shipment. He had neither knowledge of how to discriminate nor facilities that would assist in so doing. On the other hand, his own quarters were seldom if ever fit for the storage of eggs pending shipment. Some corner in the back of the store in close proximity to a barrel of fish, a stock of tobacco or cheese, often served the purpose. Shipment would then be made whenever deemed expedient in the light of the supply on hand, the merchant's time, and the facilities for transport.

In preparing shipments the merchant resorted to methods very different from those in vogue to-day. One way was to pack the eggs in oats, bran, shorts, or salt, in wooden shoe boxes. As many as one hundred dozen were placed in each box. Another common method was to saw a barrel in two at the center and equip each tub-shaped half with rope handles. The eggs were then dumped in without even packing material and were left

uncovered on top. The latter method of packing eggs for shipment from country stores was very prevalent during the seventies. It is true that wooden cases with fillers were known at that time, but the price, ranging from one dollar to one dollar and twenty-five cents per case, was so high as to be well-nigh prohibitive. The price was lowered during the later seventies, however, and from then on the cases with fillers came into more general use. The early system of packing, together with the rough handling in common box cars in transit, caused a great deal of breakage. When the egg shipment reached the central market, therefore, it was generally in a deplorable condition.

The reader may be led to wonder what sort of a middleman from the central market could be induced to deal in eggs thus offered by the country merchant. Who was looking for a product representing widely different grades and still more varied histories, delayed at uncertain intervals on the farm and in the country store as well as during the period in transit? The method of handling eggs convenient at that time for the country merchant and the farmer attracted just one group of middlemen in the large cities, and they did not buy the eggs outright but handled them for the country merchant, receiving a certain percentage of the gross returns. When the country merchant desired to get beyond the local market, he found that this was the only class of middlemen in the large cities who were willing to handle the kind of product he wanted to sell. These middlemen did not care, however, to take the risk of buying the country merchant's eggs outright. It is thus evident that the only outlet for eggs beyond the local market during that early period was through the medium of the commission man.

It is estimated that the unnecessary waste of eggs in the United States at present due to poor quality is at least 17 per cent. The loss from this source during earlier years must have been very much greater. It should also be remembered that most of the eggs are shipped during April and May. The large amount available at that time tended under the earlier method to depress the price to its lowest figure. With present-day facilities for storage unknown, few of the eggs could be

carried over to a later season. A market thus overstocked with an ungraded product naturally tended to a low price. The high percentage of waste depressed the market quotations still more. The price of eggs in the early eighties illustrated this tendency. At that time many Minnesota farmers sold eggs in the spring at six cents a dozen and even less, while in some instances they could not be marketed at all.

During those early years the risk involved in handling eggs was very great. In disposing of eggs commission men were constantly confronted with complaints from city retailers on account of the quality of the eggs furnished. On the other hand, the country merchant was dissatisfied because of the low price received. The income of the commission man varied, of course, with the number of eggs handled. It was to his advantage, therefore, to increase the volume of business as much as possible. To do this he tried to hold the trade of the country merchant already sending consignments and to induce other merchants to give him their shipments.

The stress of competition between commission men often led to grave abuses. On initial shipments from a country store returns would sometimes be forthcoming which looked better than the average. Some commission man had perhaps padded the returns in order to secure trade. Later, however, on some large shipment from the same source the returns would perhaps be unusually low, due perhaps to a high percentage of waste or partly perhaps to dishonesty in the commission man. In any event the returns were so often characterized in this way that country merchants and country people in general came in later years to distrust the average commission man. Nevertheless, it must be noted that this was the only agency available in the larger cities to take shipments of eggs from country merchants under the early method. The fact that abuses crept in should not blind one to the essential need of this agency under the conditions.

Most of the eggs received on consignment by commission men were sold to city retailers. The commission man had to pick over the eggs, sorting out the "breaks" and candling what

was left. All eggs salable to city retailers were of one grade — "a good merchantable egg." There was no market at all for "seconds" or "cracks." Certain dealers stored quantities of eggs in ice-houses, a kind of storage unthought of to-day. The presence of refrigerator service between the Twin Cities and the East rendered shipments practicable over the trunk lines, but there was no refrigerator service to Minneapolis or St. Paul from outlying points in the state. Local shipments were made in ordinary box cars and were subjected to the delays characteristic of early freight service. The percentage of loss on shipments east was very great. By the time a consignment of eggs had reached an Eastern market, the breakage and deterioration had become appalling. The Eastern commission men came to look upon these eggs as an inferior grade of goods and habitually exercised wanton carelessness in handling them. They seemed to reflect the spirit that it was not worth while to be careful since the eggs were not worth much anyway. In any event they would, of course, charge up losses from breakage and deterioration to the owner of the consignment. What the commission man wanted was to handle a big volume of business, since his commission of one cent per dozen or from 5 per cent to 10 per cent on the gross amount handled varied with the amount of traffic. The more he rushed his work, the more bulk he could get off his hands at a given expense. To him the loss in commission on breakage of deteriorated eggs was not sufficient to stimulate careful handling. In other words, it paid better from the standpoint of the commission man to seek volume of traffic and lay the blame for losses on forces already notoriously at fault.

As already stated, there were certain classes of dealers during the early period who attempted to store eggs until the season of relative scarcity. The ice-houses used were necessarily damp, since the later system of pipes or conduits providing for air circulation was practically unknown. A successful system of egg storage demands proper conditions both as to temperature and humidity. It is now held that the best results are secured where the temperature is kept at $29\frac{1}{2}^{\circ}$ Fahrenheit. If the air is appreciably colder the eggs will freeze. If the temperature rises above $29\frac{1}{2}^{\circ}$

the eggs will not keep so well. As regards humidity, the ideal figure is held to be 74°. When the air is drier than this it will hasten shrinkage. If it is more damp the eggs tend to become moldy. The extreme dampness of the old ice-house system of storage together with its poorly regulated conditions of temperature inevitably led to great losses, the risk of holding eggs was correspondingly increased, and few dealers ventured to store any considerable number. This necessarily reacted upon the conditions of the market. It meant that the great bulk of eggs would be unloaded during the spring and summer months when eggs were relatively plentiful and that the price of eggs during these seasons would be correspondingly low. It also meant that there would be a dearth of eggs during the winter season when eggs were relatively scarce and when no extensive reserve fund was available to draw on. The resulting high price during the winter season stood out in marked contrast with the ruinously low prices characterizing the season of plenty.

We are now in a position to appreciate the general effect of the early mechanism of egg-marketing. Our analysis thus far has shown that the farmer had no inducement under the early method to furnish a superior quality. On the other hand, the early system put a premium on inferior quality furnished from the farm. The system in vogue placed the farmer who was careless or dishonest on a par with men who were reliable and painstaking in the care of the products furnished. We have also seen how the country merchant was induced to adopt this early method. Taken by itself egg-handling to him meant a direct loss. Used as a means to other business, however, it was found profitable. Looked at from the standpoint of the present-day accountant, the egg business of the country merchant would undoubtedly be charged up mainly to advertising. The country merchant wanted to hold his customers. Even though he knew that a number of eggs in a farmer's basket were unfit for use, he would nevertheless take them in at the market price in order to retain the good will of the farmer. The country merchant also wanted to attract new customers. His practice of paying full price regardless of source, therefore, became general. To the farmer it became virtuous to

be shrewd and deceptive, while to the country merchant there was considerable virtue in smiling approvingly on the wares of a patron even though the merchant knew the goods were delivered under false pretenses. Likewise the opportunity for questionable practices was not lacking in the case of the commission man. He was far enough away to feel immune from the surveillance of interested parties. It was so easy to lay the blame for losses upon forces over which he had no control. He could notify the owner of the consignment that the shipment had been subjected to unusual breakage from careless handling or to considerable deterioration from delay in transit or exposure to extreme weather, and it left the country merchant with little recourse. The same commission man had perhaps won the good opinion of the merchant on an initial shipment by reporting an account of sales showing very favorable returns. Moreover, it was usually the irresponsible and unscrupulous commission man who reported most deftly to country merchants on initial shipments. The honest commission man who gave accurate returns was accordingly misjudged, while subsequent consignments from country merchants would be billed to the man whose padded returns had created the most favorable impression. It thus became a practice among commission men to report inflated returns on the initial consignments from country merchants and exercise ingenuity in making up for this advertising by judicious juggling on subsequent shipments.

Enough has been written to reveal the inevitable tendency under the early method of egg-marketing. Under this method we have seen how men were placed in a new set of relations and were trying their best to succeed in the new environment. They used such power as they had in running the new machinery. If they found that what we consider immoral qualities made the machinery run better, it was but natural that they should try to use them.

In this connection it is well to remember that no device or mechanism can be said to be best in an absolute sense. No method of egg-marketing is best for all times and conditions. Any method may be best provided we apply it to times and conditions which it fits. The fact, however, that times and conditions

are constantly changing suggests the inevitable effect of trying to perpetuate a given method for any great length of time. While it is important, therefore, to appreciate the merits of the early method of egg-marketing as applied to the pioneer conditions through which Minnesota passed some decades ago, it is fully as important to note the changes in method adopted wherever communities have successfully readjusted themselves to changed conditions. It is to a study of changes from the early method of egg-marketing that the reader's attention is directed in the following section.

THE INDIRECT METHOD OF EGG-MARKETING

So long as the farmer was able to get all the things he wanted by trading his products at the country store, the early method of egg-marketing proved fairly satisfactory. As soon, however, as he began to want other things than those for sale by the country merchant, he began to realize the limitations of his local market. It tied him down to the barter method afforded at the country store. It meant a kind of trading restricted to the wares and terms of the country merchant. Only when several local stores were bidding for the farmer's butter and eggs, did the stress of competition tend to increase the exchange value of these products and widen the range of choice open to the farmer.

The situation was somewhat different when the farmer arranged for the disposal of his fall crop. The grain was sold at the local elevator for cash, and the money thus secured enabled the farmer to pay his taxes and engage in other transactions involving the need of general purchasing power. There was a certain independence of movement acquired through the ownership of money which appealed strongly to the individualistic temperament of the average farmer. The amount of freedom thus acquired was very limited, however, for the average pioneer. Whatever money was available from the sale of grain often was needed for taxes, interest on loans, and partial payments on indebtedness. As already stated, the pressure of these fixed charges was especially severe during seasons of crop failure, and it was then that farmers came to realize the value and need of other sources of income.

Neither returns from grain at the elevator nor the trading in farm products at the store continued for any great length of time to meet the growing needs of the farmer. He saw the increasing uncertainty of a crop income and became more and more restive under a relation of continued dependence upon the country merchant.

Thirty years ago it would have been difficult to foretell how relief was to be afforded. The farmers themselves were scarcely in a position to change the system. They were, as a rule, too poor to undertake any other method. From their standpoint the facilities already available were the best they could afford to have. Struggling almost empty-handed against the powerful forces of nature, they needed every resource at their command in order to succeed in the arts of production, and had but little means and feeble effort available for the improvement of marketing facilities.

The farmers were also at a disadvantage because of undeveloped facilities for transportation. A prompt and adequate railway service is not afforded the sparsely settled frontier community. From the standpoint of railway economy it does not pay to furnish it. Nevertheless, it is to the interest of agencies of railway and water transportation to improve the machinery of conveyance for the territory they serve as rapidly as the growth of traffic permits. Improvement in the quality of service is installed wherever it results in additional business. If, however, the members of a given community do not utilize the means at hand, the managers of transportation are likely to withdraw the unused service and thus adapt the facilities to the effective demands of the people. This has been especially noticeable in smaller places where the outgoing channels of transit have gradually become adjusted to a backwardness of conditions in general.

The dependence of community life upon its facilities for transportation is vital in the development of marketing. Outside buyers experience insuperable difficulty in securing from backward localities the quantity wanted of a given product at the time it is wanted. Other communities further developed and with up-to-date systems of transportation will attract buyers because of the opportunity to secure in sufficient amounts a kind of product

which the consumers are anxious to get and because the organization of means of conveyance renders it possible to bring such products to their destination without delay and with proper care in transit. The part played by the organization of the transportation service is fundamental, therefore, in the development of the marketing facilities for any community.

We are now in a position to understand how it was the gradual improvement of transportation facilities that paved the way for the kind of relief the farmer was seeking. This was accomplished in two ways. It made possible an expansion and reorganization of the local market. It also led to the establishment of better connections with the primary markets and to the rise, in later years, of a new form of organization which has greatly modified the farmer's local market.

The first relief to the farmer of the Northwest from the limitations imposed by his relations to the country merchant did not come through changes in methods of egg-marketing. The old method of barter and its consequent dependence upon the country store continued in the marketing of eggs long after the farmer had devised another means of improvement. Moreover, the uncertainty of a one-crop system was not in itself sufficient to cause farmers to turn to other lines of work. It was a new difficulty which had gradually arisen and which compelled the farmer to mend his ways. Large numbers would undoubtedly have continued in the old and beaten path, facing the uncertainty of the fall crop as well as the limitations of the country-store market, if they had not confronted the new difficulty. As the land became relatively scarcer and therefore higher in price, the farmer found at the same time that his method of continuous cropping had led to the spreading of obnoxious weeds as well as to a depletion of the fertility of the soil and to a consequent falling off in the yield per acre. Such a method of abusing the land could not continue. Only after this had gone on for some time, however, and after the pressure had become severe, was the farmer compelled through stern need to attempt some form of readjustment. It was under conditions such as these that the farmer sought relief by resorting to live-stock farming.

The need of keeping cattle in order to continue grain farming successfully tended to direct the farmer's attention toward problems pertaining to the price return of grain and that of the live-stock industry. The effect is seen in attempts to organize co-operative elevators and creameries, while the revolt against the country merchant is revealed in numerous ventures to establish co-operative stores.

In the meantime, certain forces were slowly being set in motion which were destined in time to alter radically the methods of egg-marketing. A steady improvement in the agencies for transportation and the perfecting of a dependable system of cold storage led to far-reaching results. The former paved the way for a widening in the area of the market. The latter made possible an extension of the market in time as well as in space.

It is important to appreciate the significance of this constant widening of the market. Where buying and selling are confined within narrow limits, the price level is subject to sudden and violent fluctuations. Every widening of the field makes for greater stability and steadiness in the level of prices. As improvements in transportation took place, they had the effect of bringing a larger and larger number of buyers and sellers within the range of a given market and thus made for stability in price. The perfection of cold storage made possible considerable buying and selling for future delivery as well as for present needs. People were thus permitted to draw upon large areas for the supply of a given product and to equalize the conditions of supply the year around by transferring from the surplus seasons to those of relative scarcity. We have noted how the commission man was the sole intermediary for shipments to primary markets during earlier years. As the field of buying and selling gradually widened, however, with improvements in transportation and cold storage, and as the resulting conditions of marketing became relatively more secure, another class of middlemen from the larger centers of trade were attracted toward the business of dealing in farm produce. The method adopted was that of sending agents into country towns for the purpose of buying certain products including eggs, poultry, and butter for city shipment

and at the same time selling other classes of goods such as fruits to be shipped to the locality from the primary market. The transactions thus carried on through travelling agents were ordinarily made with country merchants. Each agent carried a draft book from the firm he represented in the city. He would buy farm products such as eggs and butter from the country merchant and pay the price with a draft on his company. In order to safeguard the shipment of the farm products purchased, provision was made so that the country merchant could not cash the agent's draft unless it was accompanied by a bill of lading showing that the produce had been shipped to its proper destination. To this end a statement was printed across the face of the draft somewhat as follows: "Original shipping receipt positively must be attached to draft, otherwise it will not be honored." The territory of each agent usually included from twenty to thirty towns so situated along a railway that all the places could be visited every week or fortnight. Where men travelled thus from one community to another, it would not have been possible to cover expenses if the buying or selling had been limited to some one commodity. By dealing in a wide variety of products, some for purchase and others for sale, the field work could be carried on at a comparatively small expense on each of the various products handled.

This system of cash buying was started through agents from the Twin Cities more than twenty years ago. The business has been constantly growing until we now find cash-buying firms with headquarters in the Twin Cities, Duluth, and in a number of the smaller cities such as Alexandria, Hutchinson, Paynesville, and Willmar, whose agents visit practically every community in Minnesota. These firms differ among themselves both as to the variety of products in which they deal and as to their method of handling these products. The firms are all alike, however, in that each of them does business on a fairly large scale. All of these firms cover relatively wide fields both in their buying and in their selling, and for the purpose of this discussion will be designated as cash-buying firms.

In order to appreciate the nature of the egg business carried on by cash-buying firms, let us take as one of our types a firm

having its headquarters in one of the larger cities and engaging in both wholesale and retail business. Its transactions will include the handling of perhaps a dozen carloads of eggs daily. A large number of regular agents in the field provide for most of the buying. Additional purchases come through creamery men, country merchants, and wagon men or special travelling agents who are added to the force of regular agents during the months of heaviest buying for cold storage. Such a firm will also make purchases from time to time from other cash-buying firms. Most of the smaller purchases are shipped in to headquarters in less than carload lots directly from country towns. A certain day each week is selected as shipping day from each town. The exact day chosen is usually determined in the light of the kind of refrigerator-car service available. Egg purchases from the different country stores are assembled at the depot in time for shipment. In some instances the eggs will be candled locally and classified accordingly. Most of the time, however, no attempt of this sort will be made at the local station. The eggs, packed in cases, are then sent to headquarters in the city. Here all eggs are candled by experts whose knowledge, experience, and equipment enable them to classify eggs far more accurately than can be done in the local towns. While the average quality of eggs received at present is far superior to what it was five or ten years ago, shipments of eggs are still received in such condition that considerable room is left for improvement. The candling test of three shipments of eggs received by one large cash-buying firm from country towns during the month of September reveals the following record:

GRADES FOUND IN THREE SHIPMENTS, SHOWN AS PERCENTAGES

Shipment	Firsts	Seconds	Cracks	Rots
A	67	19.0	8.0	6
B	73	10.0	10.0	7
C	86	7.5	1.5	5

The above eggs had been candled by country merchants and were reported in first-class condition. They were shipped in

refrigerator cars and candled at the headquarters of the firm within four hours after arrival. The particular shipments referred to above are not cited as examples of average local candling. They show how necessary it is, however, to subject shipments to rigid inspection on arrival at the primary markets.

After all eggs have been candled and graded, several methods of disposal are open to the firm. Large numbers of "first-class" eggs may be sold directly to retailers, first-class hotels, or restaurants. "Seconds" may go to second-class eating houses, inferior retail firms, and bakeries. The last-named class of establishments usually buys the "cracks" or "checks." Eggs classified below the above-mentioned grades are not marketable for food purposes at all and are therefore worked over into some manufactured product.

Instead of selling in small amounts to retailers, the firm may prepare carload lots and ship to other primary markets. It is in this way that the surplus egg supply of the region is distributed over other parts of the country. Such shipments go east to Chicago or New York, to southern cities, or to primary markets on the Pacific Coast. In recent years an important outlet for such shipments has been afforded at Winnipeg and other Canadian cities.

The extent of carload shipments has now assumed important dimensions. Egg trains are speeded with dispatch to the leading primary markets of the East. Whether eggs are to be sold in small lots directly to retailers or indirectly through city wagon men or shipped in carload lots to other primary markets depends at any given time upon the state of the local market as compared with that at other points. This balancing of sales between local and distant buyers tends to equalize price conditions over large areas.

Still another method of disposing of the eggs is open to cash-buying firms. This consists in either holding the eggs and placing them in cold storage or selling them to other parties who make a business of cold storage. In either case the effect is to remove the supply from the stock immediately available and to enlarge the reserves for seasons of relative scarcity. To the

extent that the supplies for the time being are thus diminished, present prices will tend to be raised. After due allowance has been made for possible deterioration during the period of storage, for interest on the capital invested, and for the rental charge, the tendency will be to place in storage rather than sell for present use so long as the prospective future price offers greater inducements than present market quotations. Here again will be a balancing between two distinct markets. In the same way that the cash buyer weighs the relative advantages of selling in small amounts to local retailers or shipping in carload lots to other primary markets, so, too, will he weigh the comparative worth of sales in the present and sales at some future time. Moreover, the tendency toward equalization in prices between future and present uses will also be operative in the same way that prices tend toward equality over large areas.

If the business of trading in eggs is to have the advantages of the wide field made possible by shipments to other primary markets and by storage for future sales, inducements must be at hand so that men will find it profitable to perform the middleman functions necessary in order to make these fields accessible. The interests of both farmer and consumer demand that the egg supply shall be distributed between local and distant markets and between present and future uses. Both kinds of distribution are necessary in order to prevent violent and wide fluctuations in prices.

The type of cash-buying firm referred to above represents the larger companies which sell both at retail and wholesale and which also store supplies for the future market. Such firms may also enter into special agreements with parties to deliver eggs at some future date at a stipulated price based on present quotations together with charges for rentals and interest and customary losses from deterioration. Where this is done, the uncertainties of future price disturbances are practically eliminated for both buyer and seller.

The other types of cash-buying firms do not attempt to exercise all the different functions enumerated above but rather limit their work to some particular line of activity. One firm may buy

from country merchants on the basis of mailed quotations which are good on shipments made from local towns before specified dates. In this way purchases are often made without the aid of the field agent. The shipments thus received may be sold largely to the retail trade or to hotels and restaurants.

Another type of the cash-buying firm is seen in companies ordinarily identified with the business of cold storage. These are found in both larger and smaller cities and do their buying through field agents or mailed quotations or, perhaps, through a combination of these methods. Their sales, however, are usually confined to carload lots which are shipped to other primary markets. The smaller storage plants usually make their purchases largely for the purpose of immediate sale, while larger firms may also hold considerable quantities of eggs for a future market.

The far-reaching importance of cold storage in widening the market in time as well as in space demands further emphasis. Few appreciate the extent to which the conditions of egg supply have been adjusted to the needs of the consumer at all seasons of the year by means of the storage system. Some there are whose limited and imperfect knowledge of conditions lead them to urge that cold storage should be abolished entirely. They have perhaps become familiar with certain abuses of the system, certain attempts to control supply and thus control prices. It may be, too, that experience with eggs kept in storage has revealed a deterioration in quality that has inspired general distrust as to the efficiency of the system. Both of these evils have undoubtedly been operative. It is idle, however, to think of dispensing with the use of a valuable mechanism such as this simply because of the possibility of its abuse or because of its earlier imperfections.

Methods of cold storage have been so far improved that eggs may be kept in good condition from spring until the following winter. Vast quantities are stored during April and May and furnish the reserves during months of relative scarcity. Diagram I on page 802 shows the relative numbers of eggs taken in to storage during the surplus months and the number going out of storage each month as indicated in the records of a

typical cold-storage plant. From this it appears that the greater part of the surplus is stored during April and May and a smaller portion during June, whereas the movement of eggs out of cold storage takes place mainly from October until February.

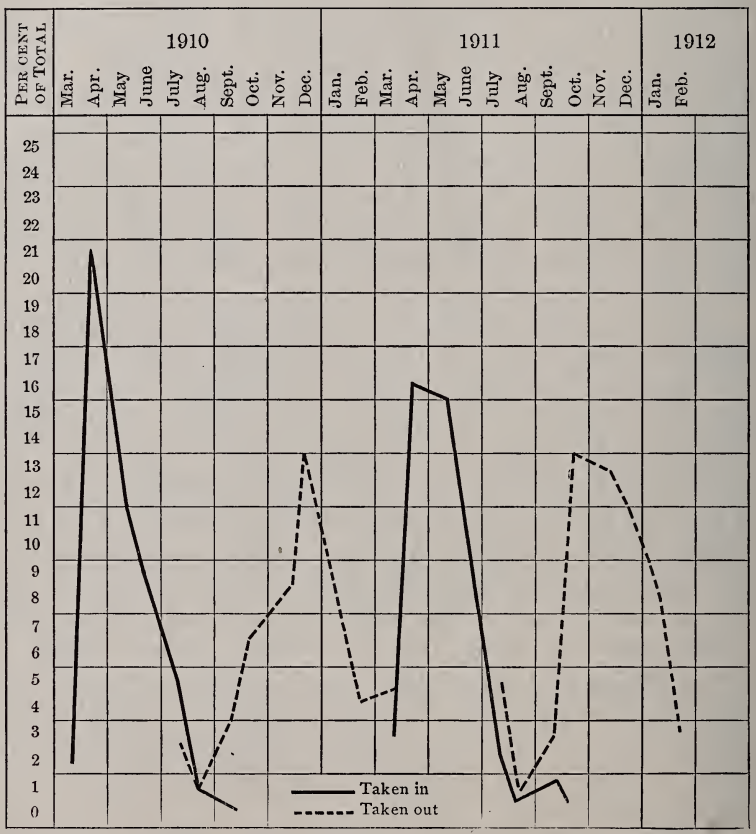

Diagram I. Relative Number of Eggs taken in and out of Storage during the Leading Months of a Two-Year Period, by a Typical Cold-Storage Plant

The effect of this distribution of supplies is seen in the lessened fluctuations of prices between the various seasons since cold-storage methods were adopted. Previous to 1900 we find wide variations in price for the different seasons, whereas recent

statistics show a tendency toward greater uniformity in prices the year around.

The average price per dozen of fresh eggs in New York during the surplus seasons of the period 1880–1890 was $15\frac{1}{2}$ cents as compared with $17\frac{1}{2}$ for the period 1900–1910, as shown by Mr. Urner, in his testimony before the United States Senate Committee on Manufactures. During the seasons of scarcity the average price during the former period was $26\frac{3}{4}$ cents and during the latter period, $29\frac{3}{4}$ cents. Regarding the last-named figures, Mr. Urner declares, however, that the average price of eggs in the season of scarcity would also be lower in 1900–1910 as compared with that of 1880–1890 if we take the average of freshly gathered and storage eggs. The conclusion that fluctuations in egg prices have been lessened since the introduction of cold-storage facilities has also been reached by the Massachusetts Commission appointed in 1911 to investigate the cold storage of food. From a study of the Boston market for the above periods they find that the average of the extreme fluctuations measured from the highest point to the lowest point in each year was a little lower for 1900–1910 than for 1880–1890. A similar conclusion was also reached in the investigation of the federal government as revealed in the report of the Secretary of Agriculture for 1911.

While fluctuations have thus been lessened, it appears that the annual price level of eggs during the decade 1900–1910 was a little higher than during the decade 1880–1890. This fact is explained by the Massachusetts Commission as due to certain other peculiar conditions affecting the egg market and is not to be attributed to the existence of cold storage.

While improvements have thus been made in the distribution of the egg supply, the real significance of the change has not become apparent to the average consumer. The questionable condition of eggs stored under the early method seems to have created a prejudice against cold-storage eggs which it is difficult to remove even after the system of storage has been radically changed. At no time was this prejudice more apparent than during the general crash in egg prices in the spring of 1910.

Storage eggs were then sold with difficulty at one-half the price paid for fresh eggs.

With modern methods and facilities for cold storage no apology needs to be made for the condition of the stored product. The large amount put away during early spring is stored under most favorable circumstances. The hen is usually in good physical condition and the eggs are surrounded by favorable climatic influences in the various movements from the nest to the storage plant. The situation would be very different if storage were attempted to any considerable extent during the summer months. The hens are then often in a semi-feverish condition and are disposed to set. The eggs are exposed to excessive heat at every stage of their movement to market. Presented in this condition for cold storage, the eggs have already undergone some change and cannot be stored as safely for any great length of time. The result is that when summer eggs are placed in storage they are usually taken out again in the early fall, whereas spring eggs are kept for later fall and winter trade.

What has been stated thus far in regard to the merits of cold storage is not to be construed as a defense of those practices which aim to secure a control of supply. Wherever the avenues of distribution for any product are brought together into a few channels, attempts are apt to be made to dam up the supply, and to the extent that egg-storage is left to a few large firms such a situation may be developed. As a rule, however, attempts to "corner" a market do not succeed. While it is true that successful corners have been created in rare instances for brief periods, it is also true that the greatest attempts at corners in modern times failed utterly and resulted in the financial ruin of those who made the venture. To the extent that the rise of cold storage invites attempts of this sort it presents the same grave problems that have arisen in connection with the distributive machinery for wheat and cotton. How evils of this character may best be minimized in the egg business presents a problem regarding which there are wide differences of opinion. Some would provide complete publicity from month to month regarding the number of eggs taken in and out of storage. To this end, a

system of rigid public inspection has been advocated. It is held that such a provision would tend to discourage excessive concentration and at the same time prevent the holding of eggs beyond a safe time limit. On the other hand, there are those who maintain that publicity is useless and that the only need in connection with our modern cold-storage system is to distinguish between fresh and storage eggs and frankly recognize the identity of each in the regular course of trade. By giving the cold-storage egg a grade of its own and selling it as such, it is held that the public will soon recognize its merits, as it has in the case of velvet chaff wheat, and that the resulting increase in demand will likewise gradually remove any marked disparity between its price and that of the standard grade.

The above opinions reveal two distinct problems in connection with modern cold storage: one relating to a control of the supply, the other brought on by the tendency of certain jobbers and retailers to offer storage eggs in the market as fresh eggs. Both problems involve evils, the prevention of which should engage our serious attention. Neither of these difficulties should be permitted to impair the efficiency of our modern machinery of egg-marketing. Suggested remedies, which in the opinion of the writer may afford effective relief, are presented in a later section of this paper.

Let us now summarize briefly the main headings discussed thus far. We have seen the restrictions and limitations of the early local market and the enlarged field afforded through the agency of the commission man. We have also noticed the further widening of the market in space and in time by means of improvements in facilities for transportation and cold storage. A study has been made of the types of cash-buying firms that have occupied this larger market. Their buying has been done mainly from country merchants either through travelling agents or local dealers, or through the use of mailed quotations. The shipments received have been handled and graded at the primary market. The part to be sold has either been sorted for local retail trade or packed in carload lots for shipment to other primary markets, while portions to be held for a future market have been placed in cold storage.

In the meantime, it is important to notice what has become of the commission man who stood as the sole intermediary during the initial widening of the market beyond the limits of the local community. As soon as the country merchant confronted the alternative of selling to cash-buying firms rather than shipping at his own risk to distant points, it did not take him long to make a choice. He preferred to sell outright and transfer the risks of shipment upon the buyer. The result was to force the commission man to enter the jobbing business and do his buying outright in order to get the trade of the country merchant. Because of such changes, the present cash-buying firms are largely made up of recruits who formerly purchased the farmers' products on a commission basis. We are now in a position to appreciate how the rise of the cash-buying firm has also brought about the passing of the commission man. Moreover, so complete a change has been wrought in this respect that little or no egg-buying by commission men is now attempted from the primary markets except at some eastern points which will be discussed later. The field which once attracted no other class of dealers than those who served as agents on a commission basis has now been surrendered to the activities of the modern jobber. As soon as improvements in transportation and cold storage had made the operations of the primary market relatively more safe, it was natural that such men should prefer to pre-empt the field outright. As jobbers they had themselves to account to rather than serve as agents for distant sellers. The business had become standardized to such an extent that men of integrity and ability could invest the necessary funds in the enterprise and make it pay. On the other hand, the irresponsible type of commission man that formerly flourished had gradually been crowded out. In egg-buying he could not compete with the jobber who purchased outright.

Nevertheless, there are market conditions under which commission business still tends to be encouraged as compared with jobbing. During a period of rising prices jobbing is encouraged and a commodity may pass through the hands of several jobbers before reaching the retailer, while during a period of falling prices the jobber is constrained to hold back. Where prices are

fairly steady or on the rise, he buys f. o. b. at country points. If conditions change and prices begin to fall, he is likely to change his terms to f. o. b. for his primary market or cease to purchase outright, offering simply to accept shipments on commission. At such times, therefore, the commission business will increase. On the whole, however, and during the greater portion of the year the handling of most of the products on the farm has now become a merchandise business and is handled by jobbers.

While the attitude of the jobber as a buyer varies with the trend of prices, his disposition to sell is likewise affected by market conditions. This was well illustrated by the flurry in the egg market which occurred in December, 1912. Owing to unexpected weather changes at that time, an unusual increase of fresh eggs was placed on the market, and this caused no little uneasiness in the minds of those jobbers who were holding a considerable supply in cold storage. They realized the importance of hastening the unloading of storage eggs. While wholesale prices declined somewhat abruptly, the retailers did not lower their prices accordingly. This tended to prevent the jobber from disposing of his stock as rapidly as he otherwise would have done. His interests as well as those of the consumer were therefore adversely affected by the action of the retailers. This explains why jobbing firms welcomed the movement started at this time by women's leagues in certain leading cities to reduce the retail price of eggs.

Women's organizations undertook to purchase large lots from certain jobbers and sell directly to the consumer. While relatively little was actually handled in this way, it nevertheless had important effects, especially to the extent that it attracted the attention of the public to the merits of storage eggs. The practice of selling the better storage eggs as fresh, leaving inferior storage eggs to represent the storage product, had created a prejudice in the mind of the public against storage goods in general. The opportunity now afforded to test storage eggs on their merits was, therefore, a distinct gain to the public, while it at the same time enabled the jobbers to unload to better advantage during a period of falling prices.

There is no place in the entire commercial world where men compete more actively than do jobbers and commission men. Few realize how keen competition is in this class of business. In order to secure traffic they reach out to the local shipping points and bid for produce. Competition is keen, not only within a given market, but between different markets. Shippers watch the quotations for the Twin Cities, Chicago, Philadelphia, and New York and sell at the point that offers the best returns.

As a result of competition between jobbers within a given primary market as well as between different primary markets, the margin on which business is conducted has gradually narrowed until it is only a fraction of what it was ten or twenty years ago. Where the net margin on eggs was formerly one and one-half cents per dozen, it has now been reduced to a third or a quarter of a cent per dozen. The same is true in the handling of other produce as well. As the volume of business has increased, competition has forced down the net profit per unit of the product handled.

The improvement of refrigerator systems and the rise of large cold-storage firms has made possible other economies as well. Jobbers handle produce for the future, as well as for the present, market. In order to do so they must be able to finance the supplies held in cold storage. Here the large cold-storage firm has been of assistance. It is able to loan money to dealers patronizing the storage plant, and enable the small dealers to hold in storage by giving them loans at a rate of say 6 per cent. Because of its superior credit the storage firm in turn borrows money at $4\frac{1}{2}$ or 5 per cent at the bank. The margin thus saved of $1\frac{1}{2}$ per cent when computed on the total amount of loans extended means a source of profit which some firms have declared sufficient to cover the office expenses for their entire business.

Aside from the business of extending loans, these large firms have also taken up the function of insurance. They insure the products placed in their care for the short periods of time desired and, in turn, take out with insurance companies longer-time blanket policies in amounts sufficient to cover the risks involved.

These longer-time policies are secured at a relatively low premium cost, thus again furnishing a source of profit.

This handling of loans and insurance may in reality be considered a by-product industry. The costs on regular storing have been greatly reduced per unit handled because an important source of income is available from these by-product activities. Where such is the case, the small firm is unable to compete and the business becomes more and more centered in a few large units. The effect thus far has been to cut down the margin on which jobbers handle products for the future market.

While jobbing has well-nigh displaced the business of commission merchants in the primary markets of the Central West, it is of interest to note that the irresponsible type of commission men had a special inducement to leave the field in Minnesota as the result of a law passed fourteen years ago. Under the operation of that law each commission merchant must obtain a license from the Railroad and Warehouse Commission and also execute and file with the Secretary of State a bond to the state for the benefit of consignors. The amount of the bond and sureties are fixed by the Commission, which may increase or reduce the amount from time to time.

When the law was first proposed it was intended to apply specifically to grain commission men because of flagrant abuses alleged in connection with that business. For instance, if a car of grain was received in the morning when wheat was selling at eighty cents and the price rose to eighty-two cents during the day, the commission man might return an account based on sales at the former figure and pocket the difference, even though the sale was made at eighty-two cents. Under the new law commission men were compelled to indicate the exact minute and hour of the day when the sale was made. The law was also made to apply to other commission merchants handling farm products, although the specific requirements in other cases were not the same as for grain.

As might be expected, the commission merchants were at first opposed to regulation of this kind. Under the operation of the law, however, it has been found that these very restrictions have

served to protect legitimate commission business. Leading commission men in the Twin Cities testify that the law has tended to increase shipments by helping them to secure the confidence of their patrons.

THE DIRECT METHOD OF EGG-MARKETING

While by far the greater part of Minnesota's egg supply is marketed according to the indirect method, described in the last section, whereby it passes through the hands of one or more middlemen on its way from the local community to the city retailer, there is a considerable and constantly growing portion which is being marketed by the direct method. As understood in this discussion, the direct method implies shipment by any one of several local agencies, including individual farmers, private companies, country merchants, or co-operative associations, directly to the city retailer without the aid of jobbers, wholesalers, or storage firms.

The origin of this direct method has, in some instances, been due to the initiative of certain retail firms in the large cities which have gone into country towns and made definite provision for a regular supply to be furnished from week to week. More often, however, the initiative is to be traced to efforts on the part of certain agencies in the local communities themselves. In either case, it is only in comparatively recent years that this method has revealed results of a kind and on a scale sufficient to attract one's serious attention. Before attempting any comparisons between the direct and indirect methods of egg-marketing, it will be necessary to explain more fully the nature of the direct method.

Retailers in the large cities often find it difficult to furnish their customers with a sufficient supply of fresh eggs during all seasons of the year. Some of the most annoying experiences encountered in the retail trade have arisen in just this way. Customers insist upon fresh eggs and first-class butter, and merchants understand full well that continued patronage depends to a great extent upon how well wants of this kind are satisfied.

In order to insure a steady supply at all seasons of the year, some retailers go into the country and make yearly contracts with

what they regard as reliable sources of supply. The contract may be made with the owner of a high-class farm to furnish the city dealer *all* the eggs sold from that place. The price paid is rarely agreed upon at some uniform figure for the entire year. It is usually placed at from two to five cents, in rare instances ten cents, above the market price and therefore varies with the different seasons of the year. One disadvantage in making such arrangements with an individual farmer is that the supply furnished is usually inadequate. For this reason, large stores which handle eggs in considerable quantities find it advantageous to make contracts with country stores or with creamery companies or other associations handling eggs. To insure uniformity in size as well as a steady supply, it is sometimes provided that the eggs must weigh not less than a minimum number of ounces to the dozen.

While a number of city retailers have thus sought out their own source of supply, by far the larger portion of egg-marketing according to the direct method owes its origin to the initiative of farmers or local companies. Where a farmers' organization or a private company drawing on supplies from a variety of people in the surrounding country attempts to establish its own market among city retailers, certain difficulties are encountered that are not easy to overcome. The fact that a group of farmers different in tastes and habits contribute to the same supply necessarily lowers its standard as compared with what can be furnished by an individual farmer. The latter may acquire a good will which differences in the membership of a group render it impossible to duplicate. To the extent, however, that farmers band themselves together under the rules of an association, they are able to minimize the above differences to a great extent, and for this reason we find that supplies furnished from associations sell at a good margin above the market price. They are often able to command as good a return as that from many high-class individual farmers. Nevertheless, the top price paid for the most select trade will be found to go to certain individual farms whose highly specialized methods place them in a class of their own.

The farmers' association, or private company, confronts another difficulty in the unloading of surplus supplies during each spring

season. During April and May the farmers find their shipments are very much larger than the regular retail customers in the cities are able to receive. How to dispose of this surplus without demoralizing the conditions of the regular market has given rise to different experiments. Some communities have been able to send their surplus to jobbing firms, and because of good will already established realize more than the regular market price on such surplus shipments. Where the quality has become known to many consumers in the city, it has sometimes been possible to distribute surplus supplies among retailers other than those who are regular patrons.

Still another plan has been considered recently by some of the local associations. This contemplates the storage of surplus supplies locally. Thus far, however, no method has been devised sufficiently safe to encourage storage to any considerable extent. Until new light is shed on the ways and means of storing eggs, it is doubtful if local farmers' associations will find it profitable to attempt such a course.

In working up a market for local shipments we thus have two sets of problems: first, those connected with the disposal of a regular supply throughout the year; and, second, those regarding the disposal of added amounts during the season of surplus. The task of working up a regular market to be supplied throughout the year usually requires considerable time. The advice of those whose experience entitles them to be heard invariably is to go slowly. Good market connections cannot be established in a month or a season. They must be built up gradually. So far as the care of the surplus is concerned the best experience thus far seems to point to a temporary extension of direct city retail trade and, more often, special shipments to jobbers.

The extent to which local communities may succeed in attempting egg-marketing according to the direct method can perhaps best be appreciated by referring to the experiences and achievements of three localities in Minnesota.

In 1908 a private firm in a town of east central Minnesota began handling eggs in connection with its creamery business.

The proprietor established a carton system whereby farmers bringing in eggs were required to stamp each egg so as to show the brand of the creamery and the number of the farmer. The eggs were placed in cartons, or paper boxes, made to hold an even dozen. These cartons were so shaped that they could

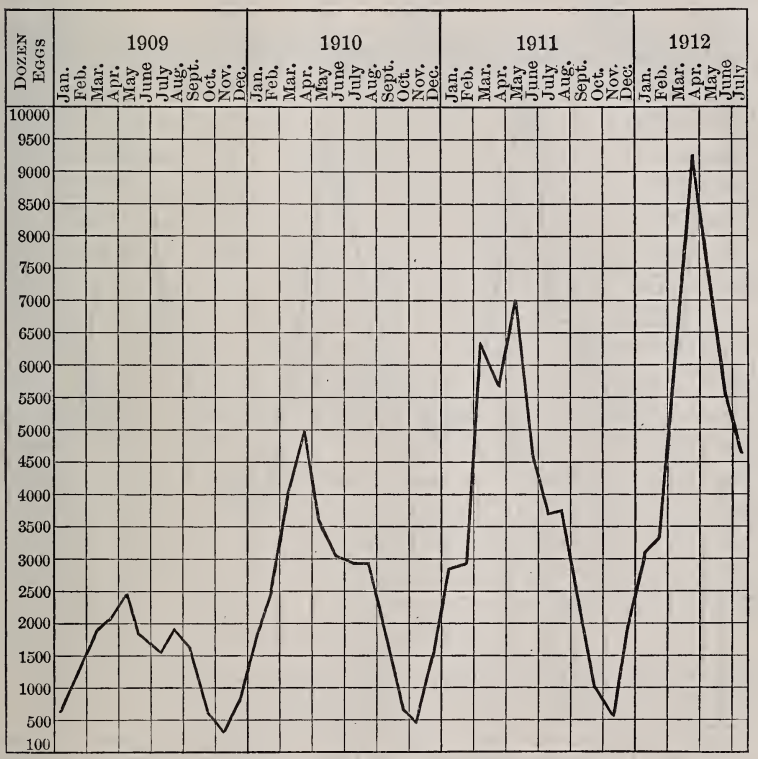

Diagram II. Number of Dozens of Eggs purchased Each Month by a Local Private Creamery in East Central Minnesota

be packed in regular egg-cases for shipment to the city. Each farmer signed an agreement with the creamery, pledging himself to comply with certain definite rules. Eggs were to be gathered twice a day. None were to be delivered which were more than eight days old. They were to be of uniform size and color,

and clean. Until brought to the creamery they were to be kept in a cool, dry place. Besides stamping the individual eggs the carton should also be stamped. All such eggs were to be sold to the above creamery.

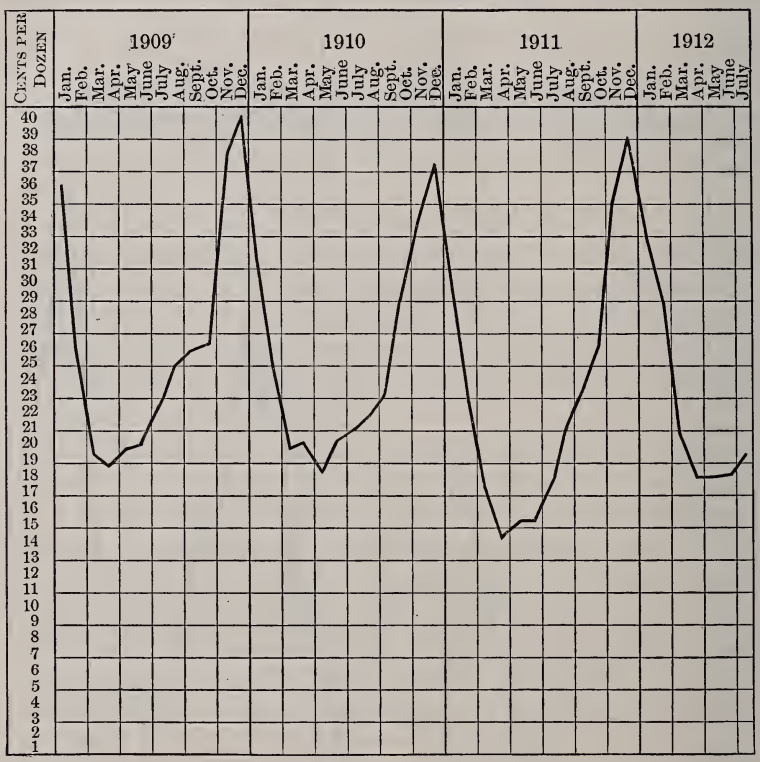
Cents per Dozen
1909
1910
1911
1912
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Jan. Feb. Mar. Apr. May June July
40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

Diagram III. Average Price paid per Dozen Eggs Each Month at a Local Private Creamery in East Central Minnesota

During the first year the number of patrons bringing eggs to the creamery varied between 30 and 40. The number ranged between 100 and 130 during the second year, and between 150 and 175 the third year. During the last year more than 200 patrons have been selling eggs at the creamery. The number of dozens of eggs purchased and shipped from the creamery has

likewise increased during these years. The largest business each year is during the spring months, and the smallest, during the fall. The highest point is reached in either April or May, while the lowest has invariably occurred in November. The regularity in relative changes from season to season as well as the increase in business from year to year is shown in Diagram II. The average price per dozen paid to the farmer each month has also varied somewhat regularly from season to season, the highest point being reached in December, while the lowest price came during the surplus season in the spring. This is shown graphically in Diagram III. The positions of two curves, one showing the relative proportions of eggs shipped and the other indicating the relative amounts paid to farmers each month, are presented in Diagram IV. This brings out very strikingly the juxtaposition of high prices and low shipments in the late fall as well as that of low prices and surplus supplies in the spring.

Where the local farmer is paid 21 cents a dozen, the local buyer sells in Duluth to retailers for 23 cents. The Duluth retailer pays the express charges which approximate 1 cent a dozen. The local margin of 2 cents consists of 1 cent per dozen charged by the creamery man for handling and 1 cent for the cost of cartons and rented cases. The retailer in Duluth buying at 23 cents sells for 29 cents. His margin of 6 cents includes 1 cent for express, leaving 5 cents for handling. These eggs sell in Duluth for 5 cents more than the market price during at least nine months in the year.

Besides shipping to retailers the creamery man has also secured a certain amount of first-class hotel trade. During the spring season surplus shipments have been made to Eastern markets at top prices.

Previous to 1908 whatever eggs were brought to this town were taken in trade by country merchants. Since that time farmers have been receiving cash. Payment is made by checks drawn on the local bank. When the egg-buying was first taken up by the creamery, the merchants feared that such handling of eggs with cash payment would injure their business and lead farmers to patronize catalogue houses. To allay such fears the

creamery men urged patrons to cash their checks at the stores rather than at the bank. Later experience has convinced the merchants that they as well as the creamery men and the farmers have benefited by the change.

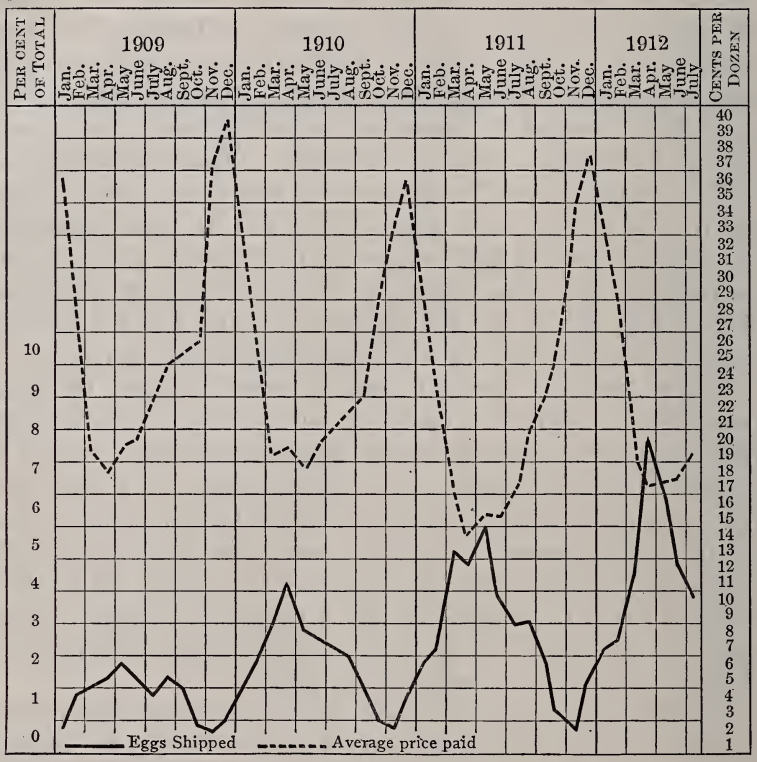

Diagram IV. Relative Proportion of Eggs shipped Each Month from January, 1909, to August, 1912, at a Private Creamery in East Central Minnesota; also the Average Price paid per Dozen Each Month

The main difficulty in this creamery man's experience with the egg business has been to get the farmers to furnish a uniform grade of eggs. With the wide variety of chickens represented in the community, eggs of different sizes and colors are mixed together. In order to encourage uniformity they adopted the plan for a while of paying one cent more per dozen for white

eggs than for brown eggs. This induced a number of the farmers to get rid of their old stock and invest in white leghorns. As a result, the average grade of eggs furnished has been steadily improved.

A community in east central Minnesota deserves our attention in this connection because of what it has accomplished through co-operative effort. The farmers of Askov could not get cash for their eggs and butter during the early years. These products had to be brought to the stores and traded for groceries. The farmers wanted to get away from the trade system because they were in need of money to pay taxes, insurance, and other obligations. This led them to organize a farmers' club nearly five years ago. Later, in May, 1909, they began the egg-selling business. One of the members of the club took charge and stipulated two times a week when he would receive eggs at a certain room in town. The eggs were to be paid for when the returns came in. This man furnished his services gratuitously, and there was no charge for the use of the room. It was soon found inconvenient, however, to keep the farmers waiting before paying for the eggs. The purpose of starting this method to begin with was to afford cash payment. The egg branch of the farmers' club therefore decided to borrow money and establish a reserve fund in order to pay cash. An additional reason for establishing the reserve fund was the fact that local merchants had suddenly begun to pay cash for eggs purchased. From the very beginning each egg was stamped with the number of the farmer and the brand of the society. Eggs were placed in cartons on which was printed a statement urging buyers to report the eggs not found satisfactory. The rules regarding the handling of eggs were similiar in many respects to those already cited. In order to insure good quality one of the by-laws stipulated a fine of fifty cents for each egg received that was not good.

The most serious problem in marketing eggs at Askov has been that of getting a market. Changes have been made from time to time in the market selected for shipment. There has been a shifting between sales to retailers and sales to jobbing

firms. Finally, during the last summer, a shift was made to a retailer in another primary market. The best results seem to have been secured from shipments made to retailers. With them the prices have been such as to cause general satisfaction among farmers. The main difficulty encountered at Askov came last spring when there was a surplus. To unload this it was necessary to go to the jobbers. These, however, did not care to take the eggs unless they were to receive all eggs shipped out by the association. Moreover, the regular retail customers did not want the eggs sold to other retailers in their neighborhood. This made it practically impossible to unload the surplus by an extension of the retail trade. It was finally necessary to sell all the eggs to the jobbing firms. A little later the egg business which had been handled in connection with the farmers' co-operative creamery was given up by the butter-maker because of the pressure of other work. Since then it has been taken care of in connection with the farmers' feed business.

The average net price per dozen received by the farmers each month from July 1, 1911, to July, 1912, is shown by the dotted line in Diagram V. On the same diagram may also be seen a continuous line indicating the average price paid the farmers by the private creamery described above. It will be noticed that there are greater fluctuations in the price received by the farmers' co-operative association at Askov than in the prices paid to farmers by the private creamery. These greater fluctuations at Askov are to be explained partly by the changes made in markets. In any case, however, the variation in prices paid by the private creamery would be less abrupt because of the policy of leaving the figures untouched for regular periods regardless of market changes.

The third example to be cited in this connection of a local community which has practiced successfully the direct method of egg-marketing is that of the farmers at Dassel. Here, as at Askov, the first form of co-operative effort was the organization of a farmers' club. Two years later, in 1909, the carton egg business was started. Rules similar to those already mentioned were adopted regarding the care and handling of eggs. At first eggs were stamped individually. Last year, however, this was

abandoned. Since then eggs have been placed in cartons, and these have been stamped in place of stamping the individual eggs.

Diagram V. Average Prices paid Farmers for Eggs Each Month from July, 1911, to July, 1912, by a Farmers' Co-operative Association and by a Private Creamery

According to the statement of the local management the stamping of individual eggs is unnecessary, it being found that the stamping of cartons serves the same purpose. Moreover, by leaving eggs unstamped they encountered less difficulty in disposing

of the surplus stock in the spring. The occurrence of the latter difficulty a year ago was the main cause in changing to the present method.

According to the new plan another improvement has been made aside from the method of stamping. Eggs are now divided into three grades:

1. Standard or best, weighing 25 ounces or over.
2. Medium, weighing 24 ounces.
3. Lower grade, weighing 23 ounces to the dozen. No eggs weighing less than 23 ounces to the dozen are allowed in cartons. Such eggs may be shipped, however, in separate cases.

Great importance is attached to the new plan of grading by weight and paying according to weight. The price variation is 1 cent between each grade. If the lower grade is worth 25 cents, the medium will bring 26 cents, and the best, 27 cents per dozen.

Before the plan was adopted, rules or fines had been used by the farmers but with little avail. On the other hand, after the grades were established by weight and payment made accordingly, the farmers began to take steps to supply the heavier or larger eggs. As a result, a movement was started to improve the quality of fowls as rapidly as possible. Before the change was made many eggs came in weighing as little as nineteen ounces to the dozen. Since that time the farmers have gradually adopted the habit of keeping the small eggs for household use. The great bulk of the eggs now marketed average twenty-five ounces to the dozen.

The new plan of grading eggs according to weight has reacted favorably upon average price returns received by the farmers at Dassel. A year ago the margin received above the market price during the surplus season was 1 cent a dozen. Last spring it was never less than 2 cents a dozen. This margin varies for different seasons of the year, running as high as 6 or 8 cents above the market price during late fall and early winter. For the entire year the margin above market quotations for "firsts" averages 3 cents.

When the handling of eggs in cartons was first started by the farmers at Dassel, they experienced considerable difficulty in working up a market. It was necessary to demonstrate that

the product they handled was superior to the average shipments sent to the larger cities. Although these difficulties have now been entirely overcome, the Dassel farmers realize that it is necessary to go slowly in building up a trade and that each locality must work up its own market very carefully. Not only has the regular market been established successfully among retailers, but the surplus during the season of overflow has gone to jobbers at a price not to exceed one cent per dozen below that received on regular shipments.

COMPARISONS AND CONCLUSIONS

In comparing results under the direct and indirect methods of egg-marketing it is important at the outset to consider the expenses for services which are now required under the indirect method and which do not appear in the list of charges under the direct method.

Important among these is the expense involved for storage. We have seen how the shipment of regular supplies is made to city retailers under the direct method and how surplus stock during the spring months is prevented from demoralizing the market with regular customers by resorting to the jobbers' trade. This simply means that those employing the direct method find it necessary to utilize the indirect route during the critical season of the year in order to protect their own method. By doing so they are able to shift the responsibility of adjusting the unequal distribution of supply at different seasons according to the regular demands of the consumer. In this way the machinery which handles products shipped under the indirect method is also called upon to take care of the surplus stocks from the direct method. Stated in other words, the whole expense of carrying over supplies from seasons of plenty and redistributing them according to consumers' wants at times of relative scarcity devolves upon the indirect method. As already explained, the invention utilized in making this possible is that of cold storage.

The services involved in cold storage under typical conditions in the Twin Cities incur a carrying charge of two and one-half

cents per dozen from spring until January first to cover interest, rentals, and insurance. The jobber, however, who holds eggs during this period assumes the risk of being able to unload his holdings so as to meet the above carrying charge in addition to the original purchase price. He counts on selling at a higher figure than the sum total of items enumerated above, and because of this incentive he has been induced to remove a certain stock from the season of surplus. Just what profit is thus secured varies among jobbers in the same primary market and among the different primary markets. It also varies with the kind of eggs handled and with the season of the year when they are unloaded. It involves not merely the risks attendant upon market changes during a storage season, but other considerations as well.

Within the same primary market will be found dealers whose superior knowledge of marketing conditions or whose superior equipment or greater capital enable them to buy to better advantage as well as to sell at an advance over what is secured by weaker competitors. As between different primary markets, other things being equal, there is added expense incurred in the larger primary markets over that of smaller primary markets.

In New York City the large scale handling involved has given rise to the presence of both a commission man and a jobber in the chain of middlemen between the shipper and the retailer, whereas the commission man has been practically eliminated in the Twin Cities.

The various items of expense to be included under middleman charges for the handling of eggs in New York City have been set forth in a report recently issued by a committee of the New York State Food Investigating Commission, and are indicated in the following table, which is quoted almost exactly. This table is supposed to show the accumulation of charges on eggs based on a hypothetical basic price of twenty cents per dozen.

ANALYSIS OF RETAIL PRICE OF EGGS IN NEW YORK CITY

Producer's price	$0.20	$0.20
Shipper's charges:		
(*a*) Labor in collection and packing .	.005	
(*b*) Cases, fillers, and packing . . .	.0073	
(*c*) Transportation charges to city .	.0106	.023
Commission for handling	.01	.01
Jobber's charges:		
(*a*) Cartage from dock to store . . .	.00133	
(*b*) Candling and grading	.00666	
(*c*) Storage and insurance	.016	
(*d*) Jobber's profit and charges . .	.01	
(*e*) Delivery to the retailer	.004	.038
Retailer's charges:		
(*a*) Operating expenses, 10% . . .	.0271	
(*b*) Retailer's profit, 5%	.01497	.042
Price paid by consumer, $0.313 . . .		$0.313

In the light of such information as the writer has been able to secure, certain modifications would have to be made in the above table in order to reflect the operations and charges in the Twin Cities. The commission man's margin of one cent per dozen would not appear in a statement for the latter markets since the jobber's returns cover the profits of the only intermediary between the country merchant and the city retailers. Modifications would also need to be made under what is termed shipper's charges. These are largely handled by the country store-keeper in the Twin City territory, and the practice of the latter, as already stated, is to pay the farmer as much as is received from the jobber after deducting proportionate expenses for transport and other necessary items.

While the above-mentioned differences would make the middleman charges less, there are other factors which operate in the opposite direction. Twin City dealers place the expense and loss on candling and grading at twice the amount shown in the above table. The higher figure is declared necessary in order to candle eggs when they are placed in storage and again when they are taken out of storage and placed in new fillers. The difference

here referred to is due to the fact that New York City supplies are mainly received in carload lots from packers who have already candled the eggs in a manner that involves far less waste than is incurred on shipments from local merchants to jobbers in the Twin Cities. This contrast will be referred to again.

Thus far certain considerations connected with the indirect method have been discussed which are not attached to the direct method. Such is the case with carrying charges including interest, rentals, and insurance which must needs be met in connection with cold storage. Inseparably linked with this is the risk feature due to uncertainty in future price and which is shouldered by jobbers at a variable margin determined by competitive bidding.

In addition to the above differences there are other contrasts between the direct and indirect methods which we shall now consider. Most important among them is that of the quality of eggs shipped from local communities under the two methods. We have already noticed the miscellaneous quality of eggs supplied under the indirect method. A mixture of different sizes and colors as well as varying degrees of quality confront the jobber. He must subject the stock to several processes such as candling, sorting, and repacking. Not only these operations themselves but also the losses from portions either entirely unsalable or marketable only as inferior goods add to the middleman's charges. This additional cost, moreover, is not an expense necessarily inherent in the indirect method. It arises mainly as the result of the "case-count" policy of paying by the dozen regardless of quality which has almost invariably been adopted in the past wherever the indirect method has been applied.

In contrast with this we find another policy applied under the direct method of egg-marketing. Here the central idea emphasized is the superiority in the quality of service rendered. Every part of the mechanism is constructed with this primary aim in view. Only eggs of the best quality will be received. The organization is so perfected as to fix responsibility on each individual who contributes to the supply. It has been found impossible to assemble a product such as eggs from a large number of farmers

and at the same time insure the quality unless individual responsibility is absolutely fixed in every case. This means that each farmer must be held responsible for the quality of eggs he furnishes and, at the same time, be remunerated according to the standard of quality furnished. It is then, and only then, that the farmer renders his best service, the consumer receives the best quality, and the middleman charges are kept at a minimum.

As soon as any policy is adopted other than that of offering remuneration according to the quality of the service rendered, we immediately introduce counteracting forces which lead to different results all along the line from the producer to the consumer. This is well illustrated under the early method where the country merchant accepted the eggs of the farmer by "case-count" and gave a flat rate per dozen regardless of quality. This rewarded dishonesty, penalized integrity, and led to flagrant discrimination. The equalization of prices among farmers meant that those furnishing eggs of inferior quality received a subsidy at the expense of those who contributed a high-class product. Moreover, to the extent that the country merchant charged higher prices for his wares because of inducements given to the farmers' trade, it meant that other purchasers at the store were compelled to buy at a higher price. In this way the farmers furnishing eggs were, as a class, subsidized at the expense of the other patrons of the country merchant. This is not all, however. Under a "case-count" system applied with no reference whatever to quality, there will arise similar differences as between different localities shipping to the same primary market. The community furnishing eggs of low quality may be subsidized at the expense of localities sending a superior grade. While the honest farmer in a given locality is thus taxed for the benefit of his dishonest or careless neighbor; while all patrons except those trading in eggs are compelled to pay the country merchant higher prices because of the egg business and as a direct contribution to it; and while enterprising communities aiming at higher standards are compelled to pay tribute to those that pay less attention to quality; while all these forms of subsidy are encouraged under a "case-count"

system, it is to be noted that the tendency in every instance is to discourage improvement in quality and offer every inducement to level downwards the standard of the product furnished.

Moreover, this same policy has increased to a large extent the expense of the middleman operations between the producer and the consumer. Aside from the unnecessary outlay involved in transportation expenses to primary markets on unsalable products, and aside from the enhancement of risk because of the uncertainty of the proportion of loss to be deducted in estimating price from primary markets, there is added a considerable expense in sorting and assembling the miscellaneous product. Such operations are directly chargeable almost entirely to the wastefulness of the "case-count" policy. The expense thus added can be materially reduced only by adopting the policy of handling eggs on a "loss-off" basis. This does not imply that the "loss-off" system will entirely do away with middlemen operations of this kind. It does mean that such expenses will be materially lessened, however.

The extra expense attached to the handling of eggs under the "case-count" system is difficult to estimate. It means a waste that amounts to many millions of dollars annually. Because of the wide extent of the practice, every state in the Union pays heavy tribute in the name of this antiquated policy. It is one of the important factors to be considered in tabulating the present-day cost of living.

THE TECHNIQUE OF MEDIÆVAL AND MODERN PRODUCE MARKETS

By Abbott Payson Usher

(From the *Journal of Political Economy*, Vol. XXIII, No. 4, April, 1915)

[Footnotes are omitted from this reprint. The reader is referred to the original article. — Ed.]

I. FUNCTION AND NATURE OF ORGANIZED SPECULATION

MEDIÆVAL ordinances prohibited speculative transactions and were particularly severe against resale without displacement of the goods. It was supposed that gains made by conveying goods from one place to another were legitimate and that gains entirely attributable to changes in value were not. The function of the middleman was supposed to consist entirely in the movement of commodities from one place to another. According to the letter of the law, speculation was illegal, but the prohibitions could not be enforced and the arbitrage transactions between different places were not free from speculation as was supposed. Under the prevailing conditions of trade, changes in value in a period of time could not be separated from the differences in value in different markets. The purchase and sale in the distant markets were not simultaneous. Purchase in the low markets of a producing region preceded by a considerable period the eventual sale in the consuming center. The interval of time that must needs elapse introduced a definitely speculative element into a transaction that was officially tolerated because it was supposed to be free from the taint of speculative gain. There were some communities where life was so distinctly self-centered that trade with distant markets was relatively unimportant, but such extreme localism was not characteristic of the late mediæval period. For the most part, trading relations were elaborately developed.

The changes in the technique of market organization in the eighteenth and nineteenth centuries have made it possible to

distinguish sharply between the truly speculative time transactions and the essentially non-speculative transactions between different places. The accomplishment of this result turns upon the full recognition of the essential interdependence of the markets that constitute a market system and upon the development of contracts for future delivery. Grudgingly the community has come to recognize that speculation is inevitable and necessary, but speculative gains are still associated in the minds of many citizens with dishonesty, gambling, and predatory activity. Because the sale of commodities without displacement seems to involve no effort, but merely chance, the profits are deemed to be tainted. The modern market system is thus misunderstood because of a firmly rooted prejudice, and the great improvement in the technique of trade almost unrecognized.

Speculation is to be distinguished from gambling by the nature of the contingency. Gambling is concerned with pure contingency apart from any other consideration. The outcome of any uncertain event can become the basis of a wagering contract. The results of games, races, political contests, and the like are the characteristic field of the wager. Attention is concentrated wholly upon the occurrence or non-occurrence of the event. In an election bet, for instance, there is no implication that either party will be directly concerned in the outcome; so far as wagering is concerned they might as well bet upon the turn of dice. A speculative transaction involves an element of contingency. It assumes that something is going to happen of which no one knows precisely what the outcome will be, but the speculator is interested in the consequences of the event. To bet on the outcome of a horse race is in itself pure gambling. The same event may contribute an essential fact to a speculative transaction. Suppose a person has bought a relatively unknown horse, thinking the animal seriously under-rated because of poor training and driving. The horse is taken in hand with a view to ultimate sale when its true powers have been revealed. The value of the horse can be demonstrated only by a series of successful performances on the race track, so that the owner is taking a chance, as it were, upon the outcome of the races. It will be readily seen,

however, that the place of these races in the owner's interest is very different from the importance attached to the same events by persons who have given money to a bookmaker on the same horse. To the owner the race is merely a way of proving to others the accuracy of opinions long held by him. It is part of a larger situation. His gain is to be derived from establishing a different opinion as to the value of the horse. The gambler is interested merely in winning or losing. To him the race is a bare fact without consequences. Speculation is thus an attempt to gain by anticipating changes in the values of commodities. Gambling is a seeking of gain and excitement from the occurrence or non-occurrence of any uncertain event. Speculation is concerned with the content and significance of events affecting the valuation of commodities, gambling with the bare fact that something has occurred.

Mediæval speculation is not to be distinguished from modern speculation by the antithesis between time differences and place differences. All speculation involves the element of time. But essential differences may arise in the mode of handling the goods during the time interval. In the Middle Ages, the speculator in produce was practically limited in his operations by the amount of his personal wealth. To-day, goods held for speculation are largely carried on credit. In abstract terms the difference may seem slight, but in reality it involves a complete transformation of the technique of trade, and the organization which to-day makes possible the extension of credit in this field also brought to an end the confusion between the speculative and non-speculative elements of dealing in produce.

The necessity of speculating upon personal capital in the Middle Ages greatly restricted the scope of professional operations. All owners of property were obliged to speculate more or less, and the owners of large estates became involved in considerable ventures. It was illegal to purchase grain for speculative hoards, and there is reason to believe that the prohibitions were enforced in a measure. We may feel some assurance that large hoards were not formed by direct purchase in the markets, but the laws could not oblige an owner to sell except in times of extreme

dearth, so that the owners and landed proprietors could legally store the rents in kind received from the estate. In regions which yielded a substantial surplus above ordinary local needs, the hoards of the tithe barns and manor houses were considerable. These stores were the basis of much wholesale buying at all times and were the main source of reliance in the years of dearth. Persons of small means were obliged by necessity to sell their grain in the local market more or less promptly. Unless the small cultivator was peculiarly needy, his grain was sold off little by little according to the possibilities of using the straw for the cattle. The drying and curing of the grain was thus provided for automatically by leaving it unthreshed until it could be sold and consumed. This practice also insured a fairly steady supply for the local market throughout the season. Force of circumstances thus made the small cultivator the dominant resource of the market from week to week. In regions having a surplus those who could postpone sale for an indeterminate period found it to their advantage to do so, and they became by force of circumstances a class of unprofessional speculators who held grain for six, seven, or eight years at times. Grain in store was usually kept in hermetically sealed pits. There was considerable risk of deterioration, but such methods of storage are excelled only by the most elaborate elevator construction of modern times. The existence of these hoards was of moment to the professional trader. Where such supplies existed the merchant from the large town found it advantageous to deal directly with the wealthy proprietors. Purchases could thus be made in bulk and without regard to the market regulations that were so frequently designed to discourage the wholesale trader. The professional trader was more likely to confine his speculation to the current season; the proprietor took the risks of loss through deterioration and of protracted waiting for a year of dearth.

The nearest approach to an application of credit to produce speculation in the Middle Ages was the purchase of a standing crop. This was definitely prohibited, but it is certain that the ordinances were not enforced. This transaction was a sale of the crop sealed by the payment of a small sum of earnest money.

A merchant was thus enabled to secure a considerable supply of grain at harvest without immediate outlay.

Speculation in produce is primarily founded upon the exact determination of the relation between the visible and the total supply. In modern times, statistical information is available which confines individual opinion within fairly narrow limits. In the Middle Ages, the visible supply constituted a smaller portion of the total supply, and the total supply was hardly more than a matter of pure conjecture. The margin of possible gain for the professional trader was thus considerably increased. The nature of speculative operations was also affected. The great maneuvers of the modern markets are founded upon superiority of knowledge of conditions affecting both demand and supply. General sources of information are so considerable that the trader's gain is based upon acquisition of more precise details and upon skill in drawing deductions from his facts. The history of the famous Patten wheat deal and of the Bull deal in cotton are interesting illustrations of modern successes. In the late Middle Ages the ignorance of the total supply was so complete that the spectacular gains of the merchants were made by refraining from giving the public any enlightenment as to total supplies and studiously creating misapprehensions. Some of the most systematic maneuvers of this type occurred in the vicinity of Paris in the latter half of the seventeenth century, just before the passing of the old order. A large portion of the grain supply of Paris came by water from the upper Marne and Seine. These merchants shipped their grain from the more distant sources of supply, and then, instead of allowing the boats to come through to Paris, they stopped them fifteen or twenty miles outside and unloaded there. Sometimes there was a pretense of holding the grain for conversion into flour; most frequently it was merely stored in secret. The arrivals at Paris could be considerably diminished. Rumors would then spread of relative dearth in the Seine and Marne valleys. Prices would rise. The supplies in the vicinity could then be sold at the advanced prices if the quantities released from store at any one time were not considerable. Such a falsification of the market was made possible

by the almost complete ignorance of the amount of the hoardings held in store by the wealthy proprietors of the country districts. The absence of information was of course a natural outcome of the conditions which created such hoards. The possibility of carrying produce on credit has resulted in more immediate sale of the crop and the storage of the greater portion of the actual stock in warehouses that are more or less public. The portion of the supply visible at any one time is much greater than in the past, and as nearly all the crop is sold in the course of the season, accurate seasonal crop statistics become possible. This brings the total supply within the range of certain knowledge.

The organization of the modern markets has extended the functions of the middleman. In the old days his only recognized function was the transportation of the commodity from place to place. Now, apart from the speculative function that we now recognize, there are also a number of non-speculative functions.

The future contract makes it essential that some means be found of trading in the particular commodity as freely as would be possible if the entire supply were actually of uniform quality. The contractor can only agree to deliver certain quantities, and as the specific lot of goods to be delivered is not designated, the quality must be described. Such future transactions imply that each portion of the supply is substantially as good as any. In fact, the most even-running commodities present differences of quality. Organized speculation thus involves a grading system. Judgments of quality are standardized, rendered independent of the individual caprice of the parties trading, carefully defined and described so that the adjustments with reference to quality can be impartially and certainly made.

Financing the storage of the commodity during sale is inevitably associated with speculation. The possible changes in value during storage make the transaction speculative in part at least, and the amount of capital value that must lie idle pending sale constitutes a specially serious problem in these days of concentrated trade. When general farming was the rule, sale of a portion of the crop was a necessary means of securing money to pay taxes and other special obligations. The means of subsistence

were raised on the farm. To-day, the farm is devoted to more highly specialized agriculture. In some places, the agricultural community is actually dependent on central markets for some means of subsistence and for most general articles of consumption. There is more need of ready money. Postponement of sale by the farmer is less feasible than in the past. He desires to sell his crop immediately after the harvest. Professional traders must thus provide means during the harvest period for purchasing the great staple crops almost entire, and with their bankers they must carry the financial burden until the stocks can be sold. This function of the middlemen is essentially new because of changed conditions in the marketing of staples. The significance of this function has not been adequately appreciated.

The modern methods of marketing the cereal crops create technical problems of conditioning. If the grain is cured before it is threshed, there is little danger of trouble from overheating and deterioration. The older methods thus made it possible to dispense with much elaborate curing that is indispensable when the crop is marketed rapidly and massed in elevators. The value of all these products is profoundly affected by the care with which they are handled in the elevators, so that the middleman finds a new source of gain in the manipulation of the product during storage.

Increased freedom to speculate has in fact narrowed the range of speculation. The activities of speculative traders are more evident, of course; much that was concealed is now given wide publicity — concentration has brought together in specific exchanges activities that were formerly spread at large through the storehouses of producing regions or receiving ports. The increased visibility of speculation disposes us to think of our age as characteristically speculative, and the change in law lends support to such a view. But such a generalization is superficial. The change in the technique of trade cannot be described in such terms. It is an error to say that mediæval trade was largely non-speculative and modern trade highly speculative. The speculative elements in mediæval trade were not very frankly recognized, but they were present. The achievement of modern commercial

organization lies in the separation of the speculative and non-speculative elements involved. During the Middle Ages all transactions involved speculation; to-day some transactions are purely speculative and others wholly devoid of speculation. To-day a trader may choose to speculate or to avoid speculation and seek gain in a purely industrial or commercial operation. The organization of speculative trade has restricted the field of speculative gains and losses, actually reducing the proportionate importance of such transactions.

The organization of produce speculation has obscured in a measure the distinction between speculation and gambling. It is not so clearly evident to-day that the speculator actually owns produce, and this has presented a real problem. In the modern markets many transactions are settled by ring settlement or set-off. The business of the different traders on an exchange during the day is naturally settled in the simplest way. If A has bought wheat and later sold a similar amount, there is really nothing to be done but pay the differences in cash. It is likewise possible to bring together a group of transactions which involve several parties who have dealt in similar lots. The whole series of purchases and sales can perhaps be liquidated by a single transfer of warehouse certificates for money, so that the parties eliminated do not actually go through the form of buying and selling produce. Critics of the exchanges have endeavored to discredit these operations by declaring that they are in fact mere wagers upon the rise and fall of prices. It cannot be denied that it is possible to make wagers upon the movement of prices. There may be some wagering in the exchanges, but it is certainly not characteristic. The operations on the floor of the exchange are wagers neither in form nor in intent. Transactions are based upon actual rights to acquire property or upon obligations to deliver property. The goods are represented only by documents of title that are symbols of property, but this does not make the transaction less real. The Supreme Court has upheld the exchange, and the doctrine of intent that is involved is one of the most fundamental legal principles.

II. TECHNIQUE OF MODERN MARKETING

Organized speculation is based upon contracts for future delivery which make it possible to sell for specified prices goods which are to be delivered in the future. These contracts may assume a variety of forms. They may be divided in general into "to arrive" contracts and term contracts; and term contracts may be of two kinds, specific-grade contracts or basic-grade contracts. The sale of goods in transit with agreement to deliver at the stated price immediately upon arrival is a form of contract that is naturally adapted to the conditions of trading in receiving ports or consuming markets. This mode of doing business grew up in connection with the maritime trade of London and Amsterdam. Cargoes were sold while still at sea, and time of arrival was naturally made the time of delivery. Such contracts are also applied to goods in transit by rail, though the shorter interval of time likely to elapse makes such a contract slightly less speculative than the marine contracts. These contracts are usually made upon the basis of samples sent in advance of the general cargo or upon the understanding that the goods must be of fair average quality (the so-called f. a. q. basis). Disputes as to quality would in such cases be adjudicated by a committee of the trading association and deductions from the price allowed if the stuff were below grade. Such contracts can therefore be used without any system of grading. The strict term contracts, however, require a formal and systematic grading. The precise nature of the grades established can vary within wide limits, but some system is presupposed by the character of the contract. The obligation of such a contract is not to deliver a specific lot, but merely to deliver, within specific time limits, a certain quantity of stuff so that there must be some definition of the quality of the goods to be delivered. Two modes of defining the qualities are open: the seller may be required to deliver a specific grade of goods at the price stated, with permission perhaps to deliver higher grades without compensation; or he may be allowed to deliver stuff of several grades at prices to be computed by additions to the price of a basic grade if the goods are above the base chosen and by subtraction

from the basic price if below the grade in terms of which the price is quoted.

These varieties of form are the outcome of different trading conditions. The relative advantages of the term contract and the "to arrive" contract are related to the slightly different problems of marketing in producing and consuming centers. The producing market will have little occasion for the "to arrive" contract; the consuming market will find it possible to use both forms, though in many cases the "to arrive" contract seems to be better adapted to the needs of trade than the other form. For this reason, it would be a serious error to regard the "to arrive" form as a rudimentary term contract, and in tracing origins and studying tendencies it is essential to remember the complexity of the problem. The two forms of term contracts are likewise an outcome of differences in conditions. Some commodities can be handled most readily in a particular market upon a specific contract; others can be handled only upon a basic contract. When the number of grades is small and proportions fairly certain, the specific contract has become the characteristic form, as it is in the wheat pit of the Chicago Board of Trade. With a great multiplicity of grades and much uncertainty as to the proportion of each grade from year to year, as in the cotton trade, a basic contract is probably essential.

In view of all these complexities of form it might seem that historical treatment of the growth of the modern system would be impracticable, but the course of development is not complicated. The Dutch in the seventeenth century used all forms of speculative contracts, and their speculation tended to degenerate into pure gambling entirely detached from actual buying and selling of goods. In England, in the eighteenth century, the "to arrive" contract was elaborately developed and placed on a secure basis by reason of the development of the bill of lading into a negotiable symbol of property. In the East India trade at London and in the iron trade at Glasgow, the dock warrant was developed and at Glasgow became a purely general certificate of ownership of a particular quantity of a specified grade of goods. This development of negotiable symbols of property was a fundamental step,

as it afforded the possibility of using the various future contracts without the dangers that had been fully revealed by Dutch experience. Finally, in the grain trade of western United States, the term contract was developed into an elaborately developed instrument that seems to represent the final form.

In the Middle Ages the law of the market insisted upon the physical presence of the goods to be bought and sold. The market could deal only in such supplies as were physically visible. The inconvenience and dangers of such limitations became serious with the rise of wholesale marketing. The essential interdependence of producing and consuming markets could not be recognized adequately until each market was made competent to trade in terms of the whole supply to be found in the entire group of related markets. The stability of the large markets was greatly increased by making it possible to buy and sell not merely the goods physically present, but goods in transit and goods actually in the hands of traders on another market. The significance of this interdependence of markets has become doubly clear since the great improvements in communication have made it possible for dealers to engage in operations simultaneously in widely separated markets. The full development of this system of trading has been confined to the period subsequent to the opening of the Atlantic cable, but the origin of the system reaches farther back into the past. This modern system of trading rests upon two types of instrument: the future contracts already described; and symbols of property, such as bills of lading, dock warrants, and warehouse certificates. The early forms of future trading have been discussed already, and the necessity of other instruments can be clearly perceived in the tendency of Dutch speculation to degenerate into gambling on differences.

The new legal doctrines which were to complete the technical foundation of the modern speculative system appear first in the law merchant and the English decisions associated with it. Neither the bill of lading nor the dock warrant was itself new, but both instruments acquired new legal attributes in the course of the eighteenth century. Originally mere receipts of goods

and contracts for carriage or storage, they became negotiable instruments whose delivery when properly indorsed constituted delivery of title.

The formative periods in the legal history of the bill of lading in England are the sixteenth and eighteenth centuries. The bill became common and acquired its general form in the course of the sixteenth century; the legal doctrine of negotiability was not fully developed until the latter part of the eighteenth century. From these general facts one is tempted to lay down the general proposition that the bill as a receipt for goods and contract of affreightment became definitely settled in the early period, but did not become a symbol of title negotiable by indorsement until the eighteenth century. This conception of the development of the bill should probably be qualified, as the sale of floating cargoes and transfer of title by indorsement of bills certainly occurred in fact long before it was solidly established in legal doctrine. A number of bills of lading are published in the "Select Pleas in the Court of Admiralty." The form of the instrument is evidently unsettled in a number of respects, and a real development is evident. The documents suggest in every respect the origin of the instrument and seem to be merely receipts for goods and contracts of affreightment, but this narrower view of the bill is invalidated by the editor's heading with reference to the bill of November 7, 1539. The bill was drawn for a consignment of iron from Bilbao to London. The iron was sold while afloat, the bill of lading was indorsed to the buyer, and the goods were delivered to him. A decision of Savary, the noted French authority on commercial law in the late seventeenth century, would also suggest that actual use of bills of lading was not limited by acknowledged doctrine. Savary says: "It is asked if a bill of lading should be deemed valid if it merely states what merchandise has been received by the master of the vessel without mention of the consignee. It is absolutely essential that the bill contain the name of the consignee, otherwise it is a fraud." With the rise of speculative trade it was the practice to draw bills in blank with the intention of filling in the name of the consignee when the goods had been sold; thus it becomes

interesting to speculate as to the inferences that may be properly drawn from Savary's statement and from the passage in the Marine Code of 1681 to which he refers. It is difficult to avoid the conclusion that merchants made frequent use of bills of lading in ways that were not recognized by the courts, so that one must avoid the narrow view of the matter. However, there are plenty of reasons for supposing that such deliveries by indorsement must have been rare. The practice of indorsement of bills of exchange was only just beginning in the north of Europe in this period and was not generally adopted until the middle of the seventeenth century. Furthermore, the fact that the full recognition of the negotiability of the bill of lading was postponed till the eighteenth century is presumptive evidence that the practice was not widespread. Had there been many cases the problems would have come to the notice of the courts earlier. The number of significant cases between 1750 and 1790 is eloquent evidence of the close relation of case law to the needs of the community.

The modern law takes form in the eighteenth century. The more important cases are: Fearon *v.* Bowers, March 28, 1753; Wright, assignee of Scott, *v.* Campbell, 1767; Caldwell *et al.* *v.* Ball, May 17, 1786; Lickbarrow *v.* Mason, 1787; and a second trial in 1794. The principle of negotiability is definitely stated in the earliest of these cases. Justice Lee said in summing up, "To be sure, nakedly considered, a bill of lading transfers property and a right to assign that property by endorsement." The legal problems centered in no small measure around the nature of negotiability. There was disposition on the part of some to assume that the degree of negotiability was precisely similar to that of a bill of exchange. This doctrine was not accepted by the courts, and in the course of the period the difference between this aspect of the two bills was clearly brought out. Wright *v.* Campbell involved the right of a factor to sell goods consigned to him by his principal while they were in transit. Caldwell *v.* Ball involved the problem of precedence of different copies of the bill of lading when the indorsements were different, though constructively the same. The case of Lickbarrow

v. Mason involved two problems: stoppage *in transitu* in case of the insolvency of the original consignee, and the validity of bills indorsed in blank. The complexity of the case, its prominence, and long judicial history made it the controlling case on the legal doctrines involved. It may be regarded as practically completing the legal doctrine of negotiability.

The instruments of title which grew out of the warehousing system are closely analogous to the bill of lading, but the economic and legal history is absolutely distinct. These warrants, or warehouse receipts, arose much later than the bill of lading, and despite their economic significance, they have not yet acquired a legal standing comparable to the bill of lading. Furthermore, the law of the different countries is quite distinct. There was apparently a parallel growth of such instruments in Holland, England, and France. In France and England the forms of the instrument were different; in Holland the tendencies were at the outset essentially similar to the English tendencies, but the movement seems to have lost its force in the latter part of the eighteenth century, so that the history of the instrument in Holland was without notable consequences. The actual history of the warrant is still hopelessly obscure, and the disproportionate emphasis placed upon the English system and its history has tended to create additional misapprehensions in a subject already fertile in difficulties. Hecht declares that the economic importance of the warrant and its legal development were "a product of English trade and customary mercantile law"; but he does not support his contention, and the history of the warrant in France and in Holland would seem to lead to different historical conclusions. England may have been quicker to adopt a new device with beneficial results to her commerce, or the greater volume of her trade may have given a greater significance to a commercial system whose technical details were well understood in both France and Holland. It is not very satisfactory to ascribe the increase in English trade to the development of the warrant system. The general decline of trade in both France and Holland toward the close of the eighteenth century

affords a more natural explanation of the relative importance of the progress of the technique of trading at this time.

The general similarity of warrants and bills of lading and the frequent association of both types of instrument under the general term "document of title" has led some German writers to suppose that the legal properties of the instruments are the same. The neglect of case law is unfortunate. Both warrants and delivery orders are to be distinguished from bills of lading with respect to the legal meaning of negotiability, and the warrants and delivery orders differ from each other.

"Goods in stores, free or bonded, can be made the subjects of security, or transfer on sales, by means of delivery orders. . . . A delivery order, like a cheque, assumes three parties. . . . The usual terms of the order are simple enough. It is, 'Deliver to A.B., or his order, so many goods, identified by marks and numbers, or so many bushels of grain from a particular lot lying in your store.' It is signed by the owner, and is in favor of the particular party therein named. That order is not of the least use to the grantee until he has gone with it to the storekeeper, and has got the storekeeper to transfer the goods to the grantee's name. . . .

"A delivery order very often is transferred from hand to hand. The original grantee indorses it 'Deliver to so and so,' and it may be indorsed twice or thrice over. It would be a mistake, however, to imagine that the delivery order, though capable of indorsation, is a negotiable instrument. . . . If you are the indorsee of a delivery order, you are not in the position of the holder of a negotiable instrument like a bill; because, in the case of the delivery order, you are subject to all the exceptions arising out of the real contract between the original grantor and the original grantee. One important consequence is that the original grantor of the delivery order can hold the goods for the unpaid price against any indorsee whatever, even against a *bona fide* indorsee for full value given."

The Scotch iron warrants are issued by iron masters and couched in approximately these terms, "I will deliver so many

tons of iron of a specified brand, to any person who shall lodge this document with me after such and such a date." The warrants pass from hand without indorsation. They "are treated in practice as if they were negotiable instruments. Now, the position of these warrants in law, according to the older authorities, is that they are not negotiable instruments: the law does not, or did not accept or adopt them as such. . . . It is attempted to make these iron warrants negotiable by agreeing that anybody who holds them for value shall be entitled absolutely to delivery, and that he shall have no concern with the state of accounts between the iron master and the original purchaser of the warrant. The law says, or said, that it is not to be allowed, and therefore these warrants stand, or stood, in no better position in law than proper delivery orders. Indeed, it is doubtful if they are not in a worse position, because a proper delivery order is expressed in favor of a certain named person, while the warrants are blank or to bearer."

It is needless to cite the cases upon which these statements are based. The law thus distinguishes between delivery orders, the Scotch warrants, and the dock warrants of the law of England as typified in the East and West India dock warrants of London. Evidently, too, the economic significance of these instruments has not been limited to the field within which they can safely be used under a strict interpretation of the law. Agreement among business men and regard for such commercial usages have tended to give these instruments in substance the flexibility possessed in fact by the bill of lading. The peculiar circumstances of the rise of the warehousing system at London was doubtless of material importance in the establishment of these practices.

III. TRANSACTIONS OF THE MODERN MARKETS

The transactions of modern commerce which contain no element of speculation fall into two general classes that are distinct both in form and in purpose. There are various forms of arbitrage dealings which are designed to secure a certain gain by reason of excessive differences in the prices current on different

markets. There are various forms of hedging designed to free the manufacturer or middleman from the risk of a change in price during the process of manufacture or sale. Arbitrage dealings thus result in small but certain gains; hedge transactions are properly neutral, involving neither a net gain nor a net loss. When the manufacturer or middleman hedges, it is his purpose to confine the chance of profit to his mercantile transactions. He avoids all risk of gain or loss by reason of changes in the price of the raw material in order to confine his attention to the technical problems of the process of manufacture and sale. These types of non-speculative transactions are dependent upon the mechanism that is usually thought of in connection with speculation. The various forms of future contracts are essential, and the practice of buying or selling in a particular place when the goods are physically located elsewhere is also characteristic. These transactions are not possible unless there are speculative and spot markets drawn together in a closely organized market system. The non-speculative transactions involve the same technical elements as the speculative transactions; the different results are due to the different combinations of the basic transactions. A future contract may be speculative or non-speculative, or speculative for one party and non-speculative to the other. A short sale may constitute part of a hedge or part of a daring speculative *coup*. The meaning of a particular purchase or sale cannot be deduced from its form; all its connections must be known. The much-discussed future contracts and short sales are indeed mere incidents of larger transactions, parts of a larger whole to which they are inseparably related. The larger aspects of marketing, too, are so closely associated that the non-speculative aspects cannot exist independently of the speculative aspects. It is this complex web of interdependent elements that constitutes the difference between the loosely related markets of the Middle Ages and the integrated market system of to-day. The arbitrage transactions and the hedge are of fundamental importance in maintaining the close correspondence between prices on different markets that is characteristic of our organized market system.

The most typical form of arbitrage brings together a spot

purchase and a sale under a term contract. Such a mode of dealing is characteristic of exporting regions where there is a keen competition for the product so that exportation is not a matter of course. In regions that seek a vent for a large surplus, the transaction is somewhat altered, though the underlying features are the same. Australian and Indian wheat are consigned to London agents to be sold on commission. Sale in some English or European port is assumed. Notice of the departure of the vessel is forwarded; samples and documents of title will also be sent and will presumably arrive considerably in advance of the ship. The vessel may be sent out with directions to call at Gibraltar for orders as to final destination. The London commission agent proceeds to sell the cargo while still afloat on a "to arrive" contract. Purchase and sale are not simultaneous, and in that sense the actual character of the deal is for a time indeterminate. The shipment of the wheat may involve a real speculation or it may be sold quickly and become in essence an arbitrage transaction.

Among the various primary markets in the producing regions of the United States another form of transaction is not uncommon. It is not a true arbitrage deal because it does not contemplate actual shipment of goods by the operator. The transaction is affected by a simultaneous purchase and sale of term contracts in the high and low markets. A term contract is bought in the low market, and a contract for an equal quantity sold short in the high market. It is assumed that the operations of other parties will bring the markets closer together and afford a small but certain gain.

Thus let us assume that on a given day in June the price of September wheat on the Minneapolis Chamber of Commerce is $1 per bushel, and the price on the Chicago Board of Trade for the same wheat is $1.04, and that an *arbitrageur* considers this difference too large and anticipates a coming together of the two prices. Accordingly, he buys on a future contract in Minneapolis and sells short in Chicago at the prices indicated. Let us now suppose that in the course of a week the Minneapolis price rises to $1.04 and the Chicago price to $1.07½ and that

the *arbitrageur* closes out his transactions at these prices. By closing out his purchase in Minneapolis by a sale at $1.04, he makes 4 cents, and by covering his short sales at Chicago by a purchase at $1.07½ he loses 3½ cents, thus clearing a gross profit of ½ cent.

This mode of trading is also applied to other types of price differences, and the practice is doubtless significant, but it would seem that its importance to the market is somewhat different from that of the other forms of arbitrage. In many respects this type of transaction seems to be particularly adapted to maintain relations between different primary markets that are receiving supplies from the producing regions. Actual shipments from market to market are in such circumstances a less convenient means of keeping markets "in line" than changes in the flow of the crop from those districts which can reach both of the markets concerned.

The hedge has been closely associated with a number of significant industrial changes. The transaction is widely used to-day in connection with flour-milling, meat-packing, cotton-spinning, and to some extent in the coffee trade. All these industries have been transformed or have grown up since the rise of the modern methods of marketing. The development of large-scale production in milling and packing would scarcely have been possible were it not for the hedges, and cotton-spinning could not be conducted upon such a narrow margin of profit if the risk of changes in value in the raw product were not eliminated. The nature of the change will perhaps be most readily appreciated with reference to flour-milling, as there has been a less general alteration of the place of the occupation in social life. The risk of loss to the miller through fluctuations in the price of grain was eliminated in the old days by transferring the risk to the consumer. The well-to-do and middle-class people were largely accustomed to buy grain and have it ground for their own use according to needs. The sale of raw wheat thus played a more prominent part in retail marketing a century and a half ago than it does to-day. The miller charged a small fee or took a portion of the meal as his toll. In the smaller towns only the

poorer people bought finished flour or bread. In the larger towns the trade in flour and bread was rather more considerable, but even in towns like Paris and London much wheat was bought by townspeople for their needs and ground at their expense in mills near the city. The milling business was non-speculative, but it was necessarily conducted on a small scale with moderate equipment. Dependence upon local slaughter-houses was an equally prominent feature in the life of the past. Absence of refrigeration and of means of rapid transportation rendered the preparation of all meat products a distinctly local affair. Furthermore, there could be no question of risk from change in values of the raw product in the interval between the purchase of the creature and the disposition of the prepared meat. There was no appreciable interval. The butchers' trade was thus non-speculative, though the consumers did not buy the live creatures.

In the course of the last half century, milling and packing have become capitalistic enterprises in no small portion of the western world. Flour consumed throughout the United States and in parts of Europe is milled in Minneapolis. Beef products consumed in the United States and in Europe are prepared in St. Louis and in Chicago. The raw material must be purchased months before the finished product can be sold. A change in market conditions might destroy entirely the mercantile profits of a highly efficient plant. Such enterprises can be conducted only if it is possible to reduce them to a non-speculative basis comparable to the conditions of the old craft organization of days gone by. The future market affords a means of avoiding the speculation on the raw product.

The essential feature of the hedge is the combination of sale and purchase at both moments of contact with the market, both at the beginning of the process of manufacture and at the time of sale. Raw materials must be purchased for production in the spot market. With this transaction is coupled a term contract calling for the delivery of the same quantity of goods during the month in which the finished product will be ready for sale. The sale of the future is at the same price as the spot purchase. The miller is thus on both sides of the market. When the time

comes for delivery of raw product under the future contract, the miller must go into the spot market to buy wheat. He is thus under an obligation to buy at the time he enters the flour market as a seller of finished product. At both moments he is buying and selling. Gains on one transaction will clearly balance losses on the other. The manufacturer is consequently independent of changes in the values of the raw materials.

The manufacturer can manage more readily if he has a large contract with the government for the supply of the army or some such service. In this case, at the time of bidding on the contract, he knows the prices of all the future options for several months in advance, and he can thus calculate pretty exactly what his raw materials will cost. If his bid is accepted he can buy on future contracts for the entire period that he will be working on that order. The cost of his raw material will thus be settled at the outset. He is clear of risk and can make his money on the process of manufacture.

In the old days all speculation was for rising prices. Goods were bought and held back from the market in expectation of a rise. If the market was ill informed, the holding back of goods might cause a considerable increase in prices, and, if the goods were carefully unloaded without at any time revealing the extent of the supply concealed, the operators might realize considerable profits. Such operations were a serious problem in the Parisian grain trade in the late seventeenth century, and probably this was a characteristic form of bull speculation in the older markets. The essence of the transaction was to curtail the visible supply, to have large supplies concealed in close proximity to the consuming market, and to dole out these invisible supplies with scrupulous care. The relative isolation of different markets made such transactions relatively easy. The supply did not really come into sight until it arrived in the market place where it was to be sold to the consumer. In modern market systems such transactions are impossible because the supply comes into full public notice in the wholesale markets of the producing regions. The great consuming markets are to-day so well informed of possible supplies that they are in some cases distinctly non-speculative in

tone. The wheat markets of London, for instance, are essentially non-speculative. The sea-board cities of the United States are also essentially non-speculative wheat markets. The tone of a modern market, however, is the product of many complex circumstances, so that it is impossible to generalize.

Speculative transactions of the modern markets assume that the market is informed of the general circumstances of trade. The gains of the operators are not secured by deceiving the public, but are based upon the accuracy of their inferences from the facts available. The facts are more or less generally known. The general body of public information is supplemented to a certain extent by private effort, but it is safe to say that the known facts are practically accessible to anyone who really wishes to get them. The great traders of the modern markets owe their success to shrewd inferences, wide experience, and command of credit in the commercial community.

Two types of speculation are now possible: speculation for a rise and speculation for a fall. The method of speculating for a rise is entirely different from the older transactions of the Middle Ages and the early modern periods. The speculation for a fall is entirely new.

The nature of modern speculation, however, is not to be understood from a mere designation of the contracts made on each side. Speculation is a continuous process based upon differing interpretations placed upon market conditions. In the large wholesale markets it has become a sort of party contest between "bulls" and "bears."

The notable speculative operations of the modern exchange center around the general situation known as the "squeeze." The name is derived from the uncomfortable position the bears are in toward the close of a month when they have undertaken to deliver larger amounts of stuff than are readily to be had in the market. The competition of the bears for stuff to deliver on "short" contracts forces prices up, so that there is a double significance in the metaphor: it represents in part the notion that the bears are subjected to pressure by the bulls, in part the idea that the forces in the market push prices up to figures that are

not actually representative of existing conditions. The squeeze is frequently confused with the corner, particularly by outsiders and by academic writers. The market operators are not likely to use the term "corner," and though their attempts to deny the occurrence of corners have not been well received, their intention of drawing a sharp distinction between the corner and the squeeze would seem to be well founded. The corner is the characteristic speculative transaction of the unorganized markets. The operator buys actual stuff with the intent to store it for a while. When he has secured substantial control of the supply, he begins to sell at such prices as he chooses because none can compete with him. The only limit is the ability and disposition of the consumer to pay the price asked rather than do without. The transaction, it will be observed, rests entirely with the individual operator. If his means are sufficient he can make a corner at any time. The squeeze is different in every essential particular. The bull operator buys both spot stuff and futures, but at the same time he must sell to the trade. It is his object to induce the bears to sell more stuff for delivery in some month in the future than they will then be able to secure except at greatly enhanced prices. Consequently, he has an interest in depleting the stocks on the primary market by sales to the trade.

This continuous selling to the trade in the interval before the squeeze is the most essential difference between the squeeze and the old corner. It is also worthy of note that a squeeze operation cannot be worked up at will by either bulls or bears. There will be no squeeze unless the bears sell excessive amounts on short contracts; even if the bears are really too optimistic about the future there can be no squeeze unless the bulls are willing to accept the challenge. The squeeze will arise only in those circumstances which produce a marked difference of opinion. In such an operation the party whose judgment of the conditions was the more accurate will gain. The famous Leiter deal in wheat of 1898 was disastrous to Mr. Leiter; the Patten wheat deal in 1909 was as conspicuously successful. These operations arise when real scarcity occurs for reasons that were not anticipated by the bears, either an unexpected shortage of crop or

more likely an inadequate estimate of demand. The European demand for American wheat is variable because it depends in no small measure upon the harvests in other parts of the world. In many sections crops are not so well reported, so that wide differences of opinion may well exist. Both the Leiter and Patten operations were based upon inferences with reference to European demand, but Leiter failed to realize the significance of crop prospects. There had been several short crops, and there was an unusual European demand which others did not foresee. The growing crop, however, was promising and ultimately proved to be large. The final offerings of the bears were based on certain knowledge of the abundance of the harvests in the great wheat-producing regions of the world. Patten was careful both in his wheat deal and in the cotton deal in which he was associated in 1909–1910. The last stages in the series of operations were in both cases dominated by the crop reports.

These episodes are without exception the most spectacular of modern speculative transactions. They exhibit the working of the modern markets when subjected to most unusual and extreme conditions. Under similar circumstances the mediæval markets would have failed utterly. These modern markets revealed in each instance a remarkably prompt understanding of the situation.

STUDIES IN THE MARKETING OF FARM PRODUCTS IN FRANCE AND ENGLAND

By Emmett K. Carver and Grafton L. Wilson, Collaborators in the Office of Markets of the United States Department of Agriculture during the Summer of 1913

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CHARENTE BUTTER

By Emmett K. Carver

EVER since the advent of the Phylloxera in the department of Charente, and the consequent destruction of the vineyards, the coöperative creameries have been a great source of wealth to the farmers. These creameries have spread throughout the department of Vendée, Deux-Sèvres, the two Charentes, and Vienne. Those visited were in Charente and Deux-Sèvres. Nearly all the creameries are members of an association which has as a nucleus the government creamery school, and their methods and organization are very similar throughout the country. We will take one of the most successful creameries, that at St. Christophe-sur-Roc, near Niort, and trace its butter from the milk to the consumer, and then compare this creamery with other creameries of the district.

The St. Christophe creamery is the property of an association of farmers. Any farmer living within collecting distance of the creamery may become a member.

Each morning the milk is collected in carts by employees of the creamery. In most creameries this is charged to the farmer, but the creamery in question does it for nothing. The cream is separated immediately on collection and the skim milk is returned to the farmers the next day when the whole milk is collected.

The creamery pays as much as possible for the milk. During July, 1913, when butter was very low, it paid 12 centimes a liter (2.62 cents a quart) and returned the skim milk. In winter it pays much more (up to 19 centimes a liter or 4.15 cents a quart) both because the price of butter is higher then and because the milk is richer. In summer it takes about 20.35 liters of milk to make 1 kilo of butter, while in winter it takes as little as 16 or $16\frac{1}{2}$ liters.

The cream is allowed to stand over night and is churned the next morning. The butter, excepting a small amount reserved for local sale, is put up in 10-kilo pats and packed in wicker baskets. The butter is first wrapped in linen with the stamp of the creamery on it and packed in straw in the baskets. The total cost of the baskets, straw, and cloth is about 25 centimes (4.8 cents) apiece. The baskets are sometimes used twice, but not when they have been sent to Paris.

The shipping to Paris is done through the Association of Co-operative Creameries. This association is composed of one hundred and twenty creameries in the department above mentioned. Each of these pays an entrance fee of 1000 francs. The society takes contracts for coal, cloth, etc. It has started a mutual insurance society. It obtained from the government the establishment of the creamery school at Surgères and contributes a considerable amount towards its maintenance. The State Railroad Company has given it the privilege of transforming nineteen freight cars into refrigerated cars, and hauls butter in them for the same price as in ordinary cars. The association provides the ice and charges the creameries $\frac{1}{2}$ centime a kilo extra for transportation in these cars. The refrigerated cars are sent to Paris by fast freight, leaving the butter country at about 5 P.M. and reaching Paris at 4 A.M.

The butter is carted immediately to the Halles or central market. The Halles are six huge pavilions devoted to the wholesale and retail provisionment of the city. One of these pavilions is used for the wholesaling of butter and eggs. All of the selling is done in commission by the *mandataires* or commissioners. The government forbids the *mandataires* to engage in trade of any

kind on their own account and fixes the commission at 3 per cent. On each basket of butter brought into the market the government levies a tax of 10 centimes, called the *abri* tax. These *abri* taxes are the only charges made by the government to the *mandataires*.

During the early part of the morning the butter is sold by private contract, but at 9.30 A.M. the sale by auction begins. The baskets of butter are placed on a long table in front of the auctioneer's stand, where they can be tasted by the prospective buyers. The basket nearest the auctioneer is placed on his stand and the sale begins. Contrary to the English method of auctioning, the seller begins at a high price and works down. If the seller knows that the buyers who are apt to buy the particular brand of butter under the hammer are absent he will discontinue lowering the price and put the basket aside for a better time. The buyers at the auction sale are retail merchants, but wholesalers sometimes buy by private contract. A triple record of each sale is kept. One record goes to the creamery, one is kept by the auctioneer, and one goes to the police.

Besides the commission of 3 per cent there are several other expenses connected with the selling at Paris. They are:

Octroi or city tax	14.50 francs per 100 kilos
Cartage from the station to the market .	10 francs per ton
Unloading and weighing	1.50 francs per 100 kilos
Abri or market tax	1 franc per 100 kilos

If by any chance the butter is kept over night a fee of 5 centimes a basket is charged. These expenses are all charged to the creamery.

There are several butter merchants not officially connected with the market who have offices in the immediate neighborhood. These men sell for the same commission as the *mandataires*, but they do not charge anything corresponding to the *abri* or for the unloading and weighing.

The retailers who buy the butter generally run stores that sell nothing but butter, cheese, eggs, milk, etc. Sometimes they rent stalls in the retail part of the Halles for 3 francs a day and sell their butter there. St. Christophe butter sold for about 3.05 francs

a kilo (26.6 cents per pound) at the auction sales during the first part of August. The retailers in the market sold it for 3.80 francs to 3.60 francs a kilo (33.2 cents to 31.4 cents per pound) according to the length of time it had stayed on their counters. The retailers in stores generally sold it for 4 francs to 3.80 francs a kilo (34.9 cents to 33.2 cents per pound).

A vertical section from farmer to consumer, taken August 1, 1913, is as follows:

	Francs per Kilo of Butter	Dollars per Pound
Farmer gets for 20.35 liters at 12 centimes	2.44200	.2135
Creamery margin (collecting, making, packing, etc.)	.24915	.0218
Freight to Paris	.09235	.0081
Refrigerated cars	.00500	.0004
Octroi	.14500	.0126
Cartage	.01000	.0009
Unloading and weighing	.01500	.0013
Abri	.01000	.0009
Commission (grocer pays 3.05 francs)	.09150	.0080
Grocer's margin	.85000	.0732
Price consumer pays	3.90000	.3407

This table shows the creamery's margin to be but 24.9 centimes. As shown by the balance sheet for 1912, the average cost of making 1 kilo of butter is almost 36 centimes. The reason for the loss is that the price of butter was lower than it had been any time since the creamery had started, and the creamery still paid its regular summer price of 12 centimes a liter. It means that the next month they would have to keep their milk price down even though the price of butter went up.

A good example of coöperative creamery that does not belong to the association of creameries is at Baignes, in Charente. It was started about twenty years ago when the coöperative movement first started in France. This creamery paid 12 centimes a liter during July, 1913. It generally took 22 liters to make 1 kilo of butter. Thus the creamery pays 2.64 francs for enough milk to make 1 kilo of butter, but if we subtract from this the value of the skim milk (2 centimes a liter) we get 2.20 francs

which the farmer gets per kilo for the butter. The creamery utilizes the skim milk for making casein and then uses the whey for feeding hogs, of which it owns about 900. This creamery sells its butter wherever it can find a market — to Bordeaux, Angoulême, Paris, and other cities. Butter sold to Paris is sent by parcel post directly to the retailer at Paris, the retailer paying all expenses. By selling in this way the creamery could clear 2.80 francs per kilo. The baskets in which the butter is sent are paid for by the grocer (25 centimes apiece) but he can sell them for 5 centimes. Thus they cost him 20 centimes.

A list of the items of expense that go to the making of the consumer's price is as follows:

	Francs per Kilo of Butter
Payment of milk to farmer minus value of skim milk	2.20
Cost of making (not including packing)	.60
Packing	.025
Freight to Paris	.125
Cartage in Paris	.025
Octroi or city tax in Paris	.140
Price grocer pays	3.115
Grocer's margin	.785
Price consumer pays	3.900

It will be seen from this table that the grocer pays more than did the grocer who bought the St. Christophe butter, while he sold it for about the same price. It is less trouble for him to buy the butter this way, however, than to buy it at the auction sale in the market.

These two creameries serve as types for the two methods of marketing we found. For the most part the organization of the creameries was like one or the other of those discussed. We found one creamery, however, that differed somewhat in that it was gradually limiting its membership by increasing the entrance fee. Last year it was 10 francs a cow; next year it will be 12 francs a cow, and so on.

BUTTER IN ALLIER

By Grafton L. Wilson

DAIRY BUTTER IN THE DEPARTMENT OF ALLIER

Case I

Place of production	Montmarault and vicinity
Place of consumption	Moulins
Average price received by producer	2.10 francs per kilo
Average price paid by consumer	3.00 francs per kilo
Difference between prices	0.90 francs
Number of intermediate steps	Two
Freight, Montmarault to Moulins	0.025 francs per kilo
Price paid by grocer	2.55 francs per kilo
Middleman's margin	0.425 francs per kilo
Grocer's margin	0.45 francs per kilo

Case II

Place of production	Environs of Moulins
Place of consumption	Moulins
Average price received by producer	2.50 francs per kilo
Average price paid by consumer	2.80 francs per kilo
Difference between prices	0.30 francs
Number of intermediate steps	One
Market retailer's margin	0.30 francs

Case III

Place of production	Environs of Moulins
Place of consumption	Moulins
Price received by producer	2.90 francs per kilo
Price paid by consumer	2.90 francs per kilo
Number of intermediate steps	None

Case I. Methods of sale by producer to middleman. In Case I the peasant women bring the butter in donkey carts to the markets in the small towns. These are held in some places once and in others twice a week. The butter is carried into the market place in small baskets, and a tax of from 10 to 20 centimes is levied upon them according to their length. The buyers or middlemen take positions in different parts of the market, and the keen competition among them, combined with the sharpness

of the peasants, keeps the prices at about the same level. Very little attention seems to be paid by the buyers to the quality of the butter, all peasants receiving the same price at any given time all through the market. In the hour for which the selling lasted the market price varied through a range of 40 centimes, the prices being 1.80 to 2.20 francs per kilo.

Packing for shipment. The butter is brought by the peasants in pats varying from 1 to 5 kilos in weight. These are wrapped by the middlemen in damp cloth or waxed paper and placed, for shipment, in large wicker baskets containing straw and holding about 100 kilos of butter.

Sale by the middlemen to the grocers, etc. The middlemen visit, during the week, four or five of these local markets and sell in large quantities to grocers, hotels, and restaurants, in the larger towns of the region. Most of the Allier butter is locally consumed, though in good seasons some is shipped to Lyons and other places. Practically none is sold on the market at Paris, where it is considered of a very inferior quality and brings only 160 or 180 francs the 100 kilos. Paris is resorted to only to avoid waste in the case of a very large supply.

Case II. Sale in retail market at Moulins. At Moulins a market is held in the covered market buildings on Tuesday and Friday. Butter is sold to the consumers by women who are regular tenants, holding stalls at an average rent of about 12 francs per month. They procure their supply from the producers of the vicinity. The maximum retail price is 3.20 francs the kilo, but the present price of 2.80 francs is considered good.

Case III. Sale by the producers in market at Moulins. On Friday the character of the market changes somewhat, as, in addition to the above-mentioned retailers, there are large numbers of peasant women. They bring in their own butter in baskets and sell by $\frac{1}{2}$- or 1-pound pats to the consumers. They pay 30 centimes for their sittings in the market. Their prices were slightly higher than those received by the regular tenants, probably due to the greater freshness of their butter.

NORMANDY BUTTER

By Emmett K. Carver

The province of Normandy, in the northwestern part of France, is the richest grazing district of the country. Butter and cheese are its chief products, although beef, milk, and cream are also exported. A great many horses are also raised there. The richness of the land can be well shown by its price. Average pasture land sold for about 4500 francs a hectare or $360 an acre. Land planted in orchards was worth very much more, say $600 to $700 an acre. Most of the farms were of about a hundred acres. The prosperity of the country is almost proverbial in France. It is not at all uncommon for a farmer to rent a farm worth $30,000 or $40,000 and to buy it after ten or fifteen years. About half the farms are cultivated by their owners and half are rented.

There are various methods of making butter in Normandy. About half of it is made by the farmers, but there are quite a few coöperative creameries, and a few creameries called coöperative-industrial, that is, owned by private persons but operated on a more or less coöperative basis. As these methods are carried on side by side, there can be little difference in the profit to the farmer by the different methods or he would change to the most profitable method.

Dairy Butter

The marketing of dairy butter in Normandy may be roughly outlined as follows. (1) The butter is made on the farms by the women, (2) sold at the public markets to men who buy for a butter "factory" or packing house, (3) shipped to those establishments by cart or rail, (4) graded and packed, (5) sold to wholesalers or retailers. We made a fairly detailed study of the various steps.

As before mentioned, most of the farms are fairly large, supporting twenty to forty cows each. These cows are all of the Normandy race, — yielding good beef and veal. Their milk,

however, is not so rich as some varieties, 3.7 per cent being a good percentage for butter-fat. Nearly all of the calves are kept for exportation or other purposes, so the skim milk is used in feeding them. The milking is done two or sometimes three times a day by the women. Sometimes the skimming is done by allowing the cream to rise, but generally hand separators are used. The churning is done on the morning of the market, which happens either once or twice a week.

After churning, the women take the butter to town. Here they generally have to pay an *octroi* or tax of about 5 centimes a kilo ($\frac{2}{3}$ cent a pound) before they can enter the market place. The buyers are lined up in the section designated for them, and to them the women take the butter. The buyers pay according to the quality, which they ascertain by the smell, and a great deal of dickering is done before any transaction takes place.

The buyers are agents for the butter-packing establishments, of which there are quite a number. The three most important as well as most representative will be described.

The *Union des beurreries de France* is a large company of 4,000,000 francs (about $800,000) capital. It owns several creameries and butter-packing factories in various parts of France. It has branch offices in Paris, London, and other large cities. One of its largest factories is at Vire, in a very rich grazing district of Normandy. When the butter is brought in from the markets it is tasted by an expert and graded into four qualities. Each of these grades is put into a special mixer and kneaded until quite uniform. It is then packed. The butter that is to be shipped to Paris is packed in 10-kilo (22-pound) wicker baskets; that which goes to England is packed in wicker baskets of better quality, each holding 28 pounds, or else in wooden boxes containing six 4-pound rolls. The wicker baskets for Paris cost 25 centimes (5 cents) apiece. Those for England cost 1.25 francs (25 cents). The boxes for England cost about .45 francs (9 cents) apiece. Before shipment the butter is placed in a cold-storage room and thoroughly chilled. When sent in large quantities it is sent in refrigerated cars. The factory at Vire packs about 16 tons of butter a day in summer and 10 to 12 tons in winter.

An establishment somewhat different in character is the factory of Lepelletier at Carentan, in Manche. This factory treats up to 30 tons of butter a day during the summer season, but very much less in winter. Much of this butter they put into cold storage, counting on a rise in price from summer to winter of about 1 franc a kilo (8¾ cents a pound). They count the cost of cold storage as 5 centimes a kilo per month, or about 4 cents a pound for eight months. They say that this is not done enough to change the price. This establishment deals in all sorts of milk goods, such as pasteurized cream, "homogenized" milk for invalids, and also in fancy butter made at their special creamery. So far as the bulk of the trade goes, however, it is exactly the same as the *Union des beurreries*.

The Bretel Brothers at Valognes in Manche do a business very similar to this, but they deal almost solely in butter. Their business is even larger than that of Lepelletier.

Each of these three butter factories sells its product to England in a different way. The *Union des beurreries* has a branch office in London. Lepelletier's factory sells through an agent in London who sells to wholesalers. The Bretel Brothers sell through a large butter house in London (Lovell and Christmas), which sells to wholesalers, retailers, and also to agents who sell to wholesalers. Each of these three London houses is sole agent for his particular butter in England.

Very little, if any, French butter is sold outside of London, however, for the Danish butter has practically monopolized the rest of the country. These three London houses meet once a week and decide at what price their butter shall be sold to the grocer. Two of these houses (the *Union des beurreries de France* and the agent for Bretel Frères, namely, Lovell and Christmas) sell both to retailers and to other wholesalers. When they sell to retailers they charge their fixed price, say 12 s. a dozen pounds, but when they sell to other wholesalers they give a rebate of 3 d. on each dozen pounds bought, thus the wholesalers can make a profit of only 3 d. a dozen pounds when they sell.

We were able to find out the commission price to only one of these firms. Lovell and Christmas get 3 per cent on the

grocer's price from Bretel Frères, and pay the rebates out of this. This same commission probably holds throughout.

The kind of butter most seen in London was the French butter packed in 24-pound boxes, known as French rolls. This butter, during the middle of August, 1913, cost the grocer 13 s., 12 s., 11 s., and 10 s. 6 d., a dozen pounds for the four different qualities. The grocers generally sell at an advance of 3 s. a dozen pounds.

The following is a vertical section of the hands through which the butter generally passes with the cost which each adds, taken August 16, 1913, for the second highest quality butter.

	Dollars per Pound
Price to farmer (2.30 francs a kilo)	.2008
Cost of buying, mixing, and packing, and packer's profits	.0288
Freight to London (Valognes to Cherbourg to Southampton to London) (30 s. a ton)	.0032
Commission 3 per cent (this includes all costs of selling to the retailers) ($\frac{3}{100}$ s.)	.0072
Grocer's margin 3 d. per pound	.0600
Price to consumer 1 s. 3 d. per pound	.3000

Most of the increments in this table are fixed. The profits of the packer, however, vary from summer to winter. In winter the price to the farmer goes up more than the price in England, for the Normandy butter has a good sale in Paris in winter. The packers could make more in winter by selling more of their butter in Paris, but they would lose English customers and so spoil their summer's trade.

We did not count the *octroi* in this table as it does not always come into the expense. When it does so it merely reduces the price to the farmer by about 5 centimes a kilo (.43 cents a pound).

Creamery Butter

The creameries visited in Normandy were the *Laiterie coopérative des fermiers d'Isigny*, the *Laiterie de Cartigny*, the *Laiterie coopérative de Chef-du-Pont*, the *Laiterie de Parfours*, and the *Laiterie de Sottevast*.

The *Laiterie coopérative des fermiers d'Isigny* is probably the finest creamery in France. It is situated in the town of Isigny, which has always been famous for its fine butter, so the creamery gets all the prestige of the name Isigny. It is owned by the principal citizen of the town, who runs it very efficiently on a more or less coöperative basis. The milk is brought to the creamery each morning by the farmers. It is weighed and a sample is taken out and put in a bottle bearing the name of the farmer who supplied the milk. Each week this is analyzed for butter-fat, and the farmers are paid accordingly. The creamery pays for the milk according to the price it receives for the butter. For the amount of milk that will make 1 kilo of butter it pays the price it receives for that butter minus 1 centime ($\frac{1}{5}$ cent) a kilo of milk for the making of the butter. If the farmers want their skim milk they pay 2 centimes a kilo for it. Most of the skim milk is, however, used for making casein. The creamery receives, in summer, an average of 3.50 francs a kilo ($30\frac{1}{2}$ cents per pound). As it takes, on the average, almost 23 kilos of milk to make 1 kilo of butter, the price of milk is about $\frac{3.50 - .23}{23}$ francs per liter or 14.2 centimes per kilo (3 cents a quart).

The butter-making is done under very cleanly conditions. The cream is pasteurized as soon as separated, and inoculated with a special ferment which starts the butter and imparts the proper taste. The churning is done each day with the milk of the day before. The best American churns are used. The butter is packed in wicker baskets, each holding 10 kilos (22 pounds), after being weighed and wrapped in linen. A layer of straw between the butter and the basket protects it from the heat.

Nearly all of this butter is sent to Paris, as that is the only place where butter as expensive as this could find a market. Most of the butter is sold by contract to the fancy restaurants and stores, although at times some of it is sent to the public market.

The butter is carted to the station by the creamery's employees and is sent to the buyer by fast freight, which means twelve hours to Paris. The charges for the transportation vary from 72 centimes a basket in large quantities to 1.25 francs per single basket.

The retail price of this butter in summer is almost invariably 6 francs a kilo whether the wholesale price is high or low. In winter the retail price goes up as well as the wholesale price.

A vertical section through the various stages of the handling is as follows:

	Francs per Kilo	Dollars per Pound
Price the farmer gets for 22.7 kilos of milk minus 2 centimes per kilo for the return of the skim milk, that is, for the butter made from his milk	2.75	.241
Creamery margin including cartage to station	.69	.060
Freight to Paris (single basket)	.125	.011
Cartage to grocery	.025	.002
Grocer's margin	2.41	.209
Price to consumer	6.000	.523

The creamery at Cartigny, owned by the *Union des beurreries de France*, makes butter very much like this and sells it at the same price, but pays 1 centime a kilo less for the milk. It sells its butter through the office of the company at Paris. As the town of Cartigny is in Isigny, this creamery gets the name Isigny to help it sell its butter.

A better sample of the average Normandy creamery can be found at Chef-du-Pont, about fifteen miles from Isigny. There, within a stone's throw of each other, are two creameries, one a coöperative and one an industrial. They both get their milk from the same neighborhood, and both get the same price for their butter, yet the industrial creamery is slowly gaining ground over the other.

The coöperative creamery is organized in practically the same way as the Danish creameries. Instead of paying for the milk at a fixed price it divides the profits each month in proportion to the amount of butter-fat supplied. This generally amounts to 12 centimes a kilo for average milk in summer, but the price is considerably higher in winter. The industrial creamery is owned by English capitalists and is managed by a Frenchman and an Englishman. It makes butter, casein, condensed milk, and evaporated cream, making whatever there happens to be the greatest

demand for. It treats about 40 tons of milk a day, collecting it from a radius of up to 15 kilometers in motor vans. The coöperative creamery treats about 23 tons of milk a day.

These creameries pay about 12 centimes a kilo for milk containing 3.85 per cent butter-fat. This would make the price of enough milk to make one kilo of butter 2.65 francs (51 cents). They receive, as a rule, 2.90 francs per kilo of butter, which leaves 25 centimes to pay the expenses of making, packing, etc. These creameries keep the skim milk, however, which is generally worth about 2 centimes a kilo. This makes about 70 centimes to pay for the making of 1 kilo of butter.

These creameries sell wherever they find a buyer. Butter sold to Paris is first chilled and then sent by fast freight over night. The freight varies from 65 centimes to 1.25 francs a basket.

The Paris retailers sell it at an average price of 4 francs. When the butter is very fresh it brings a little more; when slightly old a little less. A vertical section through the steps through which a kilo of this butter passes is as follows (the butter was sold to a small Parisian seller of butter, eggs, etc.):

	Francs per Kilo of Butter	Dollars per Pound of Butter
Prices paid to the farmer for 22 kilos of milk at 12 centimes minus 2 centimes per kilo for the value of the skim milk	2.20	.192
Cost of making (collection of milk, making butter, packing, and hauling)	.70	.061
Freight to Paris	.125	.011
Cartage at Paris	.025	.002
Grocer's margin	.95	.083
	4.000	.349

DANISH BUTTER IN ENGLAND

By Emmett K. Carver

Danish butter brings the highest wholesale price of any standard butter in England and is sold in very large quantities. Its desirability is due as much to its uniform quality as to its good flavor and keeping qualities.

The quantities of butter imported into England from Denmark and other countries show that Denmark sends to England far more than does any other one country. In fact about two-fifths of the total quantity imported by England comes from Denmark.

IMPORTS OF BUTTER

Denmark	1,707,178 cwt.[1]
Russia	638,284 cwt.
Sweden	360,357 cwt.
France	171,080 cwt.
Australia	896,085 cwt.
New Zealand	276,446 cwt.
	4,049,430 cwt.
All others	253,262 cwt.
Total	4,302,692 cwt.

As the creameries in Denmark are nearly all alike we will take the Orbæck Creamery as a typical example. This creamery is owned by the farmers of the neighborhood, each one owning one or more shares. All divisions of profits are paid in proportion to the quantities of milk supplied and not according to shares.

The milk is collected daily by the creamery's men. It is immediately separated and the skim milk is returned the same morning. The butter-making is done according to the most modern methods under the advice of a government expert.

The price paid for the milk varies according to the price of butter. The usual reckoning is that they pay for 28 kilos of milk the price of 1 kilo of butter. As it only takes 25.5 kilos of milk to make 1 kilo of butter it takes one eleventh of the price of the

[1] The hundredweight here is 112 pounds.

butter to pay for its making. The farmers pay for the return of the skim milk at the rate of 2 *ore* a kilo, but this is almost exactly the rate at which the surplus is divided, so we can neglect both the surplus and the price of the skim milk.

The packing is done in a uniform way throughout the country. The butter is packed in barrels containing $112\frac{1}{2}$ pounds (the one half pound is added to allow for evaporation).

Nearly all of the butter is sold on contracts bearing relation to the Copenhagen quotations. These quotations have existed for twenty years or more, and, although a good deal of opposition has been made to them, they continue to be used by nearly all the buyers. They are made up as follows: The committee of the Chamber of Commerce at Copenhagen meets every Thursday afternoon and decides whether the condition of the English and German market requires a raising or a lowering of the prices. This committee is composed of butter dealers, who keep the price as high as they can and still sell all the butter they wish. All of the contracts for butter are based on these quotations, but competition among buyers has resulted in an overprice being paid for the butter. Since this overprice is universal in Denmark, the committee on quotations makes allowance for it and quotes a lower price than the price actually paid. About ten years ago this overprice was so large that the quotations were about 15 per cent too low. The farmers made such strenuous objection that the quotations were raised to the proper level. At present the quotations are about 2 kroner too low. We enclose a clipping from *The Grocer* concerning these quotations.

THE GROCER AUGUST 10, 1912

COPENHAGEN BUTTER QUOTATION

The Negotiations in Denmark

On July 27 we announced that delegates from all the dairy organizations in Denmark had met at Odense in the previous week and formed a Central Dairy Union for the whole country, to operate as from January 1, 1913. The butter-quotation question was considered, and the meeting resolved to inform the Copenhagen Chamber of Commerce that its representatives would continue to take part in the fixing of the quotation on condition that the dairy-farming interests had four voting members on the committee, and that the

merchants' voting members were reduced to three, their fourth member being the chairman of the committee and having no vote. It was further decided that if the Chamber failed to accept this offer the Butter Statistics Committee would be called upon to fix a weekly quotation at Odense, if possible in conjunction with butter exporters.

Our Copenhagen correspondent now writes: The Statistics Committee of the Danish dairy farmers' organizations held a meeting at Odense on Saturday, in order to discuss the following communication from the Copenhagen Chamber of Commerce. The Committee agreed to accept the offer from the Chamber, and in the meantime to continue their coöperation on the previous basis and to express their willingness to continue the negotiations about future arrangements. The communication from the Copenhagen Chamber of Commerce was as follows:

"The committee, having had the opportunity of consulting with the Danish butter exporters, through their organization, begs to give the following answer:

"The Copenhagen butter quotation has this year existed thirty-four years, and during this long time has maintained its reputation and importance, besides serving as a basis for account sales in relation to the Danish butter producers (that is, as a buyer quotation); also has served as a sale quotation to the English receivers. The natural consequence of this double position has been this, that the quotation has now and again been subjected to strong attacks from diverse sides, but in spite of this it has by degrees developed into such an important price regulator for the sales of Danish butter, that it might be no less to the interests of Danish dairy-farming than to those of the Danish butter trade, that this quotation was maintained. The Committee, however, is unable to accept the Dairy Statistics Committee's proposal as to the formation of the committee which is to fix the Copenhagen butter quotation, whereby the commercial element of a necessity would be in the minority. Since 1884, farming representatives have assisted at the quotation, originally only as exercising a kind of control, from 1887 with the right to vote; and after the agreement arrived at in the spring of 1906 between the organizations of agriculture and dairy-farming on the one hand and the committee on the other, the farming section and the merchant section have an equal number of votes in the quotation. Hereby a natural balance of proportion between the buying and selling interests has been maintained, which the committee cannot upset. Also, for this reason, that the Union of Exporters of Danish Butter has unanimously decided that they will not agree to an arrangement such as that proposed by the Statistics Committee. As regards the British butter merchants, it might also be of definite importance that the Copenhagen quotation maintains the character of a commercial quotation, whereby it has gained its prestige. As, on the other hand, it might easily prove highly detrimental to Danish interests, both the producers' and the merchants' interests, if an agricultural quotation actually were established in addition to the Copenhagen quotation, the

committee in accordance with the distinct desires of the Butter Exporter's Union, as also with the wishes of the Committee always to meet to the utmost the dairy-farmers in this question of great national importance, makes free to invite the Statistics Committee, as soon as possible, to enter into negotiations about continued coöperation for the fixing of the Copenhagen quotation. In this connection the committee at the same time admits that the alteration of the communications about the results of the statistics, which has been passed by the agricultural organizations, points in a direction which may facilitate negotiations. In the hope that such coöperation can be arranged to mutual satisfaction at forthcoming negotiations, it is, in conclusion, submitted that the present quotation be continued as heretofore until the result of such negotiations be known, so that the continuity of such importance in this matter as regards the English market may be maintained."

As will be seen by this clipping, the quotations are not satisfactory to everyone. The Danish dairy farmers' organization has started rival quotations, but as yet they are very little used. They make no allowance for overprice to the creameries. To show the comparison between the two quotations a sample quotation for August 14, 1913, is given.

Copenhagen, Thursday

Butter. Two kroner higher. The top official quotation is now 102 kroner per 50 kilos, and equal to about 114s. per hundredweight. English money at the exchange of 18.19 kroner. The price last year at this time was 118s. 5d.

The Copenhagen butter quotation issued by the Committee of Statistics, 103 kroner per 50 kilos.

(Before the f.o.b. prices can be obtained the current overprice to the dairies, cost of freight to the port of shipment, working expenses, and profit to the shipper must be added. This applies to both quotations, but the Committee for Statistics does not recognize overprice in its quotations.)

There are three ways of selling butter that is to be sent to England.

1. By selling to an English company through one of its Denmark agencies.

2. By selling directly to an agent or wholesale house in London or other large city.

3. By selling to the Danish Coöperative Selling Society, which sells to agents or wholesalers in England.

There are two large English houses that buy through their men in Denmark, namely, the Coöperative Wholesale Society and the Maypole Dairy Company.

The Coöperative Wholesale Society supplies nearly all the coöperative stores in England with goods of all kinds, from candy to agricultural machinery. This society brings in about a third of all the Danish butter that comes to England as well as some other butters. It buys its butter through an agent in Denmark who contracts to take all the butter of some particular creameries at a price bearing a certain relation to the Copenhagen quotation. The butter is generally shipped directly from Denmark to the store from which it is to be retailed out, unless the store is near Manchester. In this latter case the butter is shipped to Manchester by a special train from Hull or Newcastle and distributed from there. The society buys at the same price other firms do and sells at about the same price that the ordinary wholesaler pays, and pays, moreover, a dividend of 4d. on the £ (or 1.65 per cent), which amounts to 2s. a hundredweight (112 pounds).

The coöperative societies that retail the butter are generally well organized and successful. They do a regular grocery business and often have other departments also, such as fuel, shoes, dry goods, hardware, etc. They generally pay a dividend of 2 to 3s. on the £ (10 to 15 per cent) on the merchandise bought of them. We enclose sample rule books, etc., of some of these societies.

A vertical section through the various hands which handle this butter, taken about September 1, 1913, is shown in the table on the next page.

The table shows that the total difference between what the farmer gets for the butter as it is in his milk and what the consumer pays in the grocery store is about 4 cents a pound. This is by far the smallest difference that occurs under any of the methods of sale we have looked into.

Next in importance to the Coöperative Wholesale Society as an importer of Danish butter is the Maypole Dairy Company. This is a company which owns seven or eight hundred retail grocery stores in various parts of England. They sell large quantities of butter, tea, and margarine, but do not deal in vegetables as our grocers do. This company buys its butter in Denmark through a resident director, and ships directly to the stores that

	Shillings per Hundredweight		Dollars per 100 Pounds	
	Prices	Increases	Prices	Increases
Price farmer gets	105/6		22.60	
Cost of making and packing		10/6		2.25
Price to creamery	116/–		24.85	
Freight to Manchester		2/6		.535 +
C. W. S. margin minus dividend at 1.66 per cent		1/–		.212 +
C. W. S. price minus dividend	119/6		25.60	
Grocers' margin minus 12.5 per cent dividend		5/–		1.07
Freight to grocery store		0/6		.107
Grocers' price minus dividend at 12.5 per cent	125/–		26.78	
	19/6	19/6	4.18	4.17 +

Difference between price to farmer and to consumer = 19/6 per 112 pounds or $4.18 per 100 pounds

need it. Their price is always lower than the price of any other private store. During August, 1913, they sold butter for 1s. 2d. (or 28 cents a pound) while the ordinary stores sold it for 1s. 4d. (32 cents a pound).

The competitors of this company say that it sells its butter at this low figure only to make a reputation for cheapness, and that it makes its loss good by its margarine sales.

A view of the buying and selling price is as follows:

Price farmer gets	104/6 per cwt. or	$22.40 per 100 pounds
Price creamery gets	115/– per cwt. or	24.61 per 100 pounds
Price consumer pays	130/– per cwt. or	27.85 per 100 pounds
	25/6	$5.45

This table shows the difference in price to be 25s. 6d. per 112-pound cask. Of this, 10s. 6d. goes to the making of the butter and about 2s. 6d. for freight (for London). This leaves 12s. 6d. margin for the Maypole Dairy Company. Of course this margin changes frequently, as the retail prices are not changed with every change in wholesale prices.

We will now take the second method of selling butter from Denmark to England, namely, by selling directly to an agent or wholesale house in London or other large city.

For London most of the butter is brought in by provision importers or agents, as they are called, who have their offices in or near Tooley Street at one end of London Bridge. These firms import bacon, hams, lard, cheese, eggs, and some canned goods, as well as butter. As a rule they sell only to wholesale dealers, but sometimes they deal with large retailers. Tradition has it that the Tooley Street firms are importers only and that they sell their goods to wholesalers living in Smithfield. The Smithfield houses are supposed to be the distributive wholesalers who sold the goods to the grocer. Although this distinction still holds roughly, the two sorts of houses are gradually becoming more and more the same.

The trading in butter and other such goods is done in the Home and Foreign Produce Exchange. The chief market day is on Friday and that afternoon after the selling is finished the committee on quotations issues its weekly quotations of prices. These quotations are so accurate that many contracts are based on them. The way in which they are made is this: the committee is composed of members from both the buying and selling elements of the exchange. The members are chosen in some irregular rotation by the secretary, and no one knows who is to be chosen next. On Thursdays the secretary issues a blank form to each member of the exchange, and on this the members put a record of their sales and their membership number. The blanks are returned in sealed envelopes to the secretary, who copies the sales off onto another sheet of paper. Then the committee meets and looks over the copy of the list of transactions and if anyone of them doubts that any transaction actually took place he says so. All the transactions that are doubted the secretary looks into, sometimes by demanding to see an account of the transaction and sometimes by merely interviewing the buyer or seller concerned. All transactions that actually took place go into the making of the quotations. The following is a sample quotation.

THE GROCERS' GAZETTE AUGUST, 16, 1913

OFFICIAL MARKET REPORT

The following was issued by the Committee of the Home and Foreign Produce Exchange, Hibernia Chambers, London Bridge, S. E., at 2 o'clock on Friday: —

BACON. — Irish, lean sizeable, 81s., 84s., 86s.; lean stout, 80s., 83s., 85s.; stout sizeable, 80s., 83s., 85s.; fat stout, 80s., 82s., 84s.; good and seconds, 77s., 79s. Continental, Danish, No. 1 sizeable, 76s., 78s., 82s.; No. 2 sizeable, 76s., 78s., 82s.; No. 3 sizeable, 75s., 77s., 81s.; No. 1 sixes, 75s., 77s., 81s.; No. 2 sixes, 75s., 77s., 81s.; No. 1 stout, 76s., 78s., 81s.; No. 2 stout, 76s., 78s., 81s.; good and seconds, 73s., 76s.; Swedish, No. 1, sizeable, 75s., 77s.; No. 2, sizeable, 72s., 76s.; No. 3, sizeable, 72s., 75s.; Dutch, No. 1 sizeable, 74s., 76s., 77s.; No. 2, sizeable, 73s., 75s., 76s.; No. 3, sizeable, 73s., 74s.; sixes, 72s., 74s., 75s.; heavy, 72s., 74s.; good, 70s., 74s. — with a slow trade prices have been reduced. Canadian, No. 1 (50–62 lb.), 80s., 81s.; No. 2 (50–62 lb.), 78s., 80s.; No. 3 (50–62 lb.), 78s.; heavy weights, 76s., 78s. — in small supply. American, Cumberland cut, 67s., 73s.; bellies, box, 70s., 72s., up to 78s.

BUTTER. — French, fresh rolls, 10s. 6d., 11s., 12s., 13s.; extra mild, 106s., 110s.; finest, 102s., 104s.; Paris, 102s., 112s.; good to fine, 96s., 98s.; inferior, 90s., 94s. — steady. *Danish, finest, 120s., 122s. — steady.* Russian and Siberian, finest, 96s., 98s., 100s.; good to fine, 92s., 94s.; inferior, 88s., 90s. — fair demand for finest, other descriptions slow. Dutch, creamery, 102s., 108s.; rolls, 12s. 6d., 12s. 9d., 13s. Irish, creamery, 106s., 108s., up to 110s.; unsalted, 108s., 110s.; factory, 90s., 96s., 100s. — slow. Australian, Victorian, finest, 104s., 106s.; unsalted, 104s., 106s., 108s.; good to fine, 100s., 102s.; unsalted, 100s., 102s. New South Wales, finest, 102s., 104s., 106s.; unsalted, 104s., 106s.; good to fine, 96s., 100s.; unsalted, 98s., 102s. Queensland, finest, 102s., 104s.; unsalted, 102s., 104s., 106s.; good to fine, 96s., 100s.; unsalted, 96s., 98s. — little doing.

HAMS. — Irish, Northern, 8–12's, 112s., 114s.; 12–16's, 112s.; heavy, 110s.; Southern, 8–12's, 124s.; 12–16's, 124s. — steady enquiry. York and Cumberland, 8–12's, 126s., 130s.; 12–16's, 120s., 128s.; 16–20's, 116s., 128s.; 20's and over, 116s., 128s. — scarce. Canadian, long cut (green), 8–12's, 93s., 95s.; 12–16's, 92s., 95s.; heavy, 88s., 95s. — scarce. American, long cut (green), 8–12's, 83s., 86s., 92s.; 12–16's, 79s., 82s., 84s.; heavy, 77s., 80s., 83s.; short cut (green), 8–12's, 80s., 84s.; 12–16's, 78s., 81s.; heavy, 78s. — poor demand. Picnics, 5–6's, 53s., 53s. 6d.; 6–8's, 52s., 53s.; heavy, 53s. — slow.

LARD. — Irish, — Bladders, 61s., 68s., 71s.; do., seconds, 57s., 66s.; kegs, 61s. — f.o.b., quiet. American, — Pails, 56s. 9d., 57s.; boxes, 28 lb., 56s., 56s. 3d.; boxes, 56 lb., 55s. 6d., 55s. 9d.; half barrels, 55s. 3d., 55s. 6d.; tierces, 55s., 55s. 3d. — a little more doing at the reduction. Danish, — Bladders, 61s., 63s.

Most of these prices are the prices from an agent to a wholesaler. The retailers have to pay higher prices than these.

This exchange also has an arbitration board which has prevented thousands of pounds being squandered in lawsuits. This board, like the committee on quotations, is composed of members of the exchange chosen in rotation. When a dispute arises the secretary appoints three men of the board who are likely to know most about the case, to arbitrate between the disputants. Although a great deal of responsibility is put on the secretary, the system seems to have worked admirably.

Let us now trace a shipment of butter from Denmark to the London consumer through the maximum number of steps. The butter is sold by the creamery to the Tooley Street house or agent in London. As we have seen, this agent deals only with wholesalers and is a true middleman. His working expenses are very light, as he seldom handles the produce himself but stores it at the wharf at which it is landed until it is delivered to the buyer. The agent sells the butter at the produce exchange to the wholesaler. The agent's expenses are generally as follows: freight from the Danish creamery 2s. 6d. a cask (112 lb.), storage (if the agent has no warehouse of his own) 6d. to 1s. a cask, cartage 3d. a cask or less.

The wholesaler who buys the butter has more expenses than the agent. He does the carting and storing himself, and often splits a cask or two if the grocer is a small one. The wholesaler sells at an advance of 3s. 5d. to 5s. per cask.

As we have said before, some of these wholesalers import some of their butter themselves. There is one firm (named Lovell and Christmas) that imports all of its butter and sells to other wholesalers as well as to retailers. This firm has an establishment in Copenhagen which buys the Danish butter. When selling to the grocer Lovell and Christmas often sell in large quantities and store the butter at 10d. a month per cask. The grocers can call for it as they need it.

The retail prices on Danish butter are generally fairly well fixed. Nearly all of the London grocers that handled it charged 1s. 4d. a pound (32 cents). If they sell 112 pounds for this price

they get about 149s. They generally pay about 125s. a cask, leaving them a margin of 24s. The grocer's profits are kept fairly low because of the competition with the Maypole Dairy Company, which sells the same butter at 1s. 2d. a pound (28 cents).

The third method of sending butter from the Danish creameries to England, namely, by selling to the Danish Coöperative Selling Society, was very little used in sending butter to London. We could obtain no definite information as to the working of this society.

PEACHES IN LYONS, FRANCE

By Grafton L. Wilson

Lyons was, at one time, a very important market for peaches grown in the surrounding country and also for fruit sent from further south and from Spain. The city is, however, no longer the important center that it was ten or twelve years ago. The main cause for the decline of Lyons as an outlet for native fruit is the growing tendency for the buyers to go to the growing districts and buy from the farmers. Up to ten years ago the railroads made special rates to Lyons from Spain and the South so that it was the center for all fruit coming into the region, but these rates are now extended to all the cities of that part of the country and fruit is shipped directly. Large quantities of fruit are still handled at Lyons, however, and the market in this city affords a very good opportunity to observe both the sale of native fruit for shipment to Paris, Germany, and other points, and the sale of imported fruit for local consumption.

Peaches which are not grown in the immediate vicinity of Lyons are handled by commission agents. The expenses of selling are as follows:

Commission, usually	6 per cent
Rent of containers	0.15 francs
Unloading per package	0.10 francs
Handling per package	0.20 francs
Cartage per 100 kilos	0.75 francs
Freight per ton from the peach-growing regions of the south of France	30–40 francs
Return of empties	0.10 francs

The total expense per 100 kilos is about 15 francs from Châteaurenard, which is an important peach market in the South, including freight and the other expenses of shipment and selling. The cartage which is charged to the sender at .75 francs per 100 kilos costs the commission agent .40 francs, thereby netting him a profit of .35 francs per 100 kilos. Selling is done for growers and for middlemen, or shippers, as they are called, who buy in the producing regions and pack the fruit for shipment. The proportion of professional shippers has decreased very greatly in the last fifteen years, as the growers are, in increasing numbers, adopting the practice of shipping their own fruit. This is a cause of inconvenience to the agents handling the fruit sent by the growers, as it is, as a rule, more poorly packed than that formerly sent by professional shippers. Also there is no standard of packing among the growers, and the resulting irregularity greatly increases the difficulties of wholesale selling by the agents. The commission agents have combined into a society through the activity of which they have forced the railroads to return empties within eight days. Eight years ago, this society decided to levy a tax of 10 centimes on the jobbers for each basket bought. The jobbers then combined and set up a coöperative commission house of their own which has proved to be a strong competitor for the other establishments doing a commission business.

The class of men buying most largely from the commission firms is the jobbers. These dealers resell to groceries, hotels, restaurants, and others who buy in large quantities. Many of them also do a retail trade in the open-air market which is held every morning until 9.30 A.M. along the river bank. Here they may rent places for 15 centimes a square meter. During the local peach season these men also buy from the growers to resell as above. In August, 1913, the commission agents had practically no peaches to sell, and what few they did have sold at about 180 francs the 100 kilos. The result was that the jobbers were buying native fruit from the growers, although, due to the bad crops, there was very little on the market at a time which would ordinarily be the height of the season for peaches of Lyons and vicinity.

There are three methods of retailing peaches at Lyons: the fruit shops and groceries, the stalls in the covered fruit, vegetable, and meat market, and the stalls at the general, open-air market above mentioned. There was very little, if any, variation in the prices for these different methods, except in the large grocery stores and fruit shops in fashionable quarters where prices were somewhat higher. The highest price found was 3.50 francs the kilo for very high-grade fruit which was wholesaling at 200 to 250 francs the 100 kilos. The peaches of good quality which would bring about 200 francs the 100 kilos at wholesale were sold at retail for 2.70, 2.80, or 3.00 francs the kilo. A very common price was 2.50 francs the kilo for a grade of fruit which sold at wholesale for 180 to 200 francs the 100 kilos. Some poorer peaches were priced at retail at 1.40 and 1.80 francs the kilo. As will be seen from the above figures, the difference between wholesale and retail prices ranged from 50 centimes to 1 franc per kilo, and in the case of the best fruit probably even more. These prices cannot, however, be taken as any indication of the usual condition at Lyons, as 1913 was an exceedingly poor year for peaches in all of the growing sections which supply the city.

Lyons is the market for a large section of fruit-growing country, and there are numerous shippers doing business to Paris and Northern France, Germany, and Switzerland. At three o'clock every morning during the season the growers begin to come into the city. They bring their peaches in their own donkey carts, usually roughly sorted and loose in large, shallow baskets. A tax of 15 centimes per square meter is charged for places on the market.

The men who buy on this market are of two general classes, namely, the above-mentioned jobbers, who purchase for local consumption, and the shippers. It was formerly the custom for these shippers to send their fruit to be sold by commission agents on the markets of Paris and other cities. Of recent years this method has been fast losing ground, and at the present time comparatively few peaches are shipped in this way. Most of the

shippers now have regular clients from whom they receive orders for definite amounts of fruit. The shipper then procures the required fruit from the growers, if possible, otherwise from the commission agents or jobbers; grades and packs the fruit and ships to his client, who pays the freight. Men doing business in this way are, of course, enabled to pay much higher prices than the shippers who buy to send to Paris on commission, as they already have their orders and can fill them at any price which would not seem unreasonable to their clients. The average profit of the shippers thus filling orders was about 10 per cent as nearly as could be determined. For the finest selected peaches sent to the fashionable hotels at Vichy, Aix-les-Bains, etc., the profit was much higher than this.

The prices received by the growers in 1913 were exceptionally high. During one day only did the price fall as low as 75 francs the 100 kilos, and the following day it immediately jumped to 110 to 120 francs the 100 kilos. Prices continued to rise until at the time of observation they ranged from 165 to 200 francs. The latter price is the highest ever paid by shippers or jobbers except under very exceptional circumstances. The cost of harvesting peaches was very difficult to determine, as the growers are all small landholders doing most of the work themselves with the help of their families. Six francs the 100 kilos would seem, however, to be the average cost, but this estimate would be increased if hired labor were used. This would include sorting by the grower himself, which is, as a rule, only rather roughly done. The wages of a hired picker are usually 3 francs a day.

Cold storage of peaches has very little effect on the market of Lyons, as the capacity of the plant is not great, and up to the present time it has not proved successful. In 1913, however, one of the large shippers stored a considerable quantity of peaches, apparently with great success. During the short period of low prices he had bought very good fruit at 80 francs the 100 kilos. It was very carefully graded and packed for refrigeration, and the shipper hoped to get 300 francs the 100 kilos at the end of eight or ten days. The fruit was kept at $2\frac{1}{2}^{\circ}$ centigrade

and seemed to be in perfect condition. The charge for cold storage was 15 francs per month for 100 kilos.

There is another system of shipping fruit which, though unlawful, is still practiced. Men go to the sections where the peach season is at its height, buy in fairly large quantities, and ship to Paris or some other center where the local peach season is just beginning. They send the fruit in their own names and travel at the same time to the destination of the fruit. Here this buyer sells on the market which is supposed to be strictly limited to growers selling their own locally grown fruit, his only expense besides his own car fare being the small tax which he must pay for a place on the growers' market. This is, of course, an unfair form of competition, both for the growers near Paris or other centers and for the dealers handling fruit from the large producing sections through regular channels.

At Millery, a small town near Lyons, about one hundred farmers have formed a society which is one of the very few which have made a success of the coöperative shipment of peaches and other fruit. It has now been running five years and has proved to be a great help to the farmers, who were formerly at the mercy of a few shippers who combined to pay very low prices. Up to 1912 no entrance fee was charged, but in that year new members were taxed five centimes per tree, and in 1913 the tax was raised to 10 centimes per tree. The method of doing business is very simple, as it depends almost entirely on the president, who has active charge of all the affairs of the society. The farmers bring in the peaches to the office of the society, where they are sorted into four grades and packed by experts. The president then sells the fruit according to his own judgment. From the price received for each 100 kilos the president gets 5.50 francs from which he must pay all the expenses of selling except the cost of the materials of packing. These expenses include the wages of the packers (30 centimes an hour) and the cost of cartage to the railroad (which is 30 centimes the 100 kilos). If the price received by the grower is as much or more than 50 francs the 100 kilos, the president is entitled to a commission of 2 per cent in addition to the 5.50 francs before

mentioned. The freight to Paris is 11.35 francs the 100 kilos (113.30 the ton) and the total cost for selling fruit in Paris on commission is about 30 francs the 100 kilos.

The containers most commonly used are crates holding two layers of average peaches or three layers of small fruit. They hold about 10 kilos of peaches with about 36 in each layer. For fine fruit similar crates are used which are shallower, and the peaches are packed in one layer only. Both styles of crate cost roughly a franc apiece and this price is required as a deposit from all the buyers. These are the property of the commission agents, and a rent of 15 centimes is charged to senders for their use. There are several methods of packing in these crates. For poorer fruit excelsior alone is usually used. The better grade peaches are often separated from each other by strips of paper. The selected peaches, especially when placed in cold storage, are each carefully wrapped in specially prepared, sulphurized paper and packed in cotton. High-grade fruit to be sold in Vichy and other nearby watering places is packed in large open wicker baskets holding about 17 kilos and costing 3 francs. These are lined with paper and excelsior, and the four layers of fruit are separated by paper and excelsior. The packers, who are all women, get from 35 to 50 centimes an hour. Small cardboard boxes are also used, holding 12 or 16 peaches, each packed in cotton in a separate compartment. Due to the presence of a cardboard-manufacturing business dependent on the silk industry of Lyons, these boxes and packing cost only 25 centimes apiece. They are packed in large crates for shipment. Open wooden baskets costing 50 centimes and holding about 5 kilos are also somewhat used.

The freight from Lyons to Paris is 111.25 francs per ton for shipments of over 50 kilos and 2.25 per package of 10 kilos. In Paris large quantities of peaches are sold in the central market. A charge of 3 francs a day is made for the use of the stalls. The very high-grade fruit is usually sold at auction, but the greater part of the peaches are sold privately. There are also numerous commission firms with selling rooms near the market. The expenses of selling at Paris are as follows:

Commission	8 per cent
Cartage per ton	5.00 francs
Unloading from train per package less than 20 kilos	0.05 francs
Unloading from train per package less than 50 kilos	0.10 francs
Unloading from train per package over 50 kilos	0.20 francs
Rent of container when the property of Paris dealer	0.10 francs
Duty for foreign fruit for 5 kilos	0.50 francs

Peaches from Lyons were selling at wholesale on the central market for 200 to 220 francs the 100 kilos; and in the rooms of the commission dealers prices ranged from 180 to 300 francs. The de luxe peaches sold at about 17 francs for two dozen.

Fairly good peaches were priced at retail at 2.00, 2.20, and 2.40 francs the kilo. Many were also sold at 2.60 and 2.80 francs the kilo, the latter being the grade sold by the growers at Lyons for 170 or 180 francs the 100 kilos. In the larger, more fashionable stores, peaches were not sold by weight, but were packed in cotton in small baskets or boxes and were sold by the piece or sometimes by the box. The prices, when sold in this way, ranged from 50 centimes to 3 francs each. The selected fruit sold by the Lyons shippers for 250 to 300 francs the 100 kilos was largely sold in this way.

In Dijon peaches are sold in large quantities for local consumption in the covered market. As a rule both a wholesale and retail business is done by the same merchant. An average stall costs 2 francs a day regularly, the price being raised to 7 francs on the market days, which are held twice a week. The commission varies from 5 per cent to 10 per cent according to the crop. In the summer of 1913 the usual charge was 8 per cent. The dealers who sell in their own rooms charge the same commission. The cartage costs 25 centimes the 100 kilos. The prices for fairly good fruit were 150 and 200 francs the 100 kilos. In the market, good peaches retailed at 1.60 to 2 francs the kilo and in shops from 1.80 to 2.80 francs the kilo.

GAGES FROM AGEN

By Grafton L. Wilson

A market is held for gages early every morning at Agen and in some of the other towns of the department of Lot-et-Garonne during the height of the season. The fruit is brought by the growers in small donkey carts and is usually packed loosely in large shallow baskets. A placement tax of .10 francs is charged per basket for selling on the market. The shippers buy directly from the growers, and their employees take the fruit to their warehouses, which are close to the market place. The prices in July, 1913, ranged from 20 to 30 francs for 50 kilos, which is the unit used for fruit in this section. These shippers send representatives to the markets in the towns of Lot-et-Garonne and adjoining departments.

For the English trade, which is largely supplied by this section, baskets of wicker called half-sieves are used. They hold 10½ to 11 kilos of gages and cost 1.25 francs apiece. As a rule, these containers, which are used seven or eight times, are the property of the London wholesalers who charge 10 or 20 centimes rent. Another style of half-sieve, costing 40 francs the hundred, is of woven light wood and makes one trip only. The cost of packing, exclusive of the price of the container, is 40 centimes per half-sieve, which includes the straw, string, and labor. For the French trade, gages are shipped in wicker baskets holding 25 kilos and costing 3 francs. These are used only during the height of the season when prices are low. At the beginning and end of the season, when gages are to be had only in small quantities and at high prices, they are shipped in small, covered baskets of wicker which hold 6 kilos and cost 90 centimes.

Most of the gages go to London via Boulogne-sur-Mer. For shipment, several of the Agen shippers combine and send 1 to 3 carloads at a time, as the freight is thereby reduced. Special ventilated cars are used, and the freight is 108 francs the ton for a shipment of over 5000 kilos, and 117 francs the ton for shipments under that amount. Five layers of sieves are placed one upon the other in the cars and air is allowed to circulate freely above

them, the upper portion of the sides of the cars being open. The fruit is forwarded at Boulogne, by agents who charge 5 centimes per sieve for their services. The entire shipment takes a little less than three days. The freight from Boulogne to London is 50s. the ton. Some of the harder fruit is shipped by boat via Bordeaux, but by far the greater part is sent via Boulogne.

The freight from Agen to Paris is 110 francs the ton. A considerable business is also done in shipping by parcel post, for which the prices are as follows:

DELIVERED AT STATION		DELIVERED AT DOMICILE	
3 kilos	60 centimes	3 kilos	85 centimes
5 kilos	80 centimes	5 kilos	1.05 francs
10 kilos	1.25 francs	10 kilos	1.50 francs

The London wholesalers sell French gages on a commission of 5 per cent with an additional charge of 2d.–3d. per half-sieve for cartage handling, and market toll. The wholesale price in 1913 was exceptionally high, varying from 8s. to 12s. a half-sieve.

French gages brought from 6d. to 10d. per pound (usually 8d.) at retail in London in bulk. The better-grade fruit was often repacked in small boxes with cotton and sold at 2s. per box and up.

In the middle of August, 1913, gages were sold at wholesale in Lyons, at the very high price of 80 and 90 francs the 100 kilos, for average fruit. They were retailing at 1.20 and 1.40 francs the kilo.

The freight for gages to Manchester from the French growing sections is 2s. or 2s. 6d. the half-sieve. In 1913 the few gages that were put on the market brought from 8 to 10s. at wholesale.

STAPLE VEGETABLES IN LONDON

By Emmett K. Carver

The methods of selling vegetables in London are practically the same as in Manchester, except that nearly all the produce is sold directly from the wholesaler to the greengrocer without the intervention of the huckster. Instead of having one large market, however, London has several smaller ones. The Covent Garden, Borough, and Spitalfields markets are the chief vegetable markets.

The Covent Garden market is situated in the center of London within a few minutes walk of Charing Cross. It, together with much of the surrounding land, is the property of the Duke of Bedford, to whom all rents, tolls, etc., go. Most of the flowers for London go through this market, and a great many vegetables from Belgium and Holland, as well as from the surrounding country, are sold here. There is also a large auctioneering hall where foreign fruits, onions, etc., are sold.

The Borough Market belongs to the borough of Southwark. It is situated in one of the poorer sections of the city, at the southern end of London Bridge. Although a few flowers are sold here, the chief commodity is vegetables, some of which are sold by commissioners, buyers, etc., and some by truck farmers who cart their produce in themselves.

The Spitalfields Market is situated near the banking section and not far from a poor residential district. It is about the same as the Borough Market although a little larger. The Stratford Market is a rather unimportant market just outside of London.

A rather interesting experiment is being tried at the Covent Garden Market. The Agricultural Organization Society has formed a coöperative society for selling farm produce. The society has a shop just on the border of the market, and it does business in just the same way that other dealers do. It is only moderately successful at present. It trades in almost exactly the same way as the other merchants, and so has just as many expenses. What would be profits to the private trader are eaten up by the salaries of the managers. The directors feel that if the members were

compelled to sell through the society, thus insuring it a regular supply of all products, its success would be certain. The following is a leaflet issued by the society.

EAST ANGLIAN FARMERS LTD.

Coöperative Salesmen

Manager — Mr. H. Barker.
Regd. Office — 141, Fenchurch Street, London, E.C.
Depots — Covent Garden & Stratford Markets, London. Established 1897.
Bankers — Barclay & Co., Lombard Street.

This coöperative society of fruit and vegetable growers, market gardeners, farmers, and smallholders, consists of about 76 members and 15 affiliated societies, and since its formation has disposed of produce to the value of over £160,000.

It is managed by a representative committee elected by the members, who have complete control over the whole of the operations of the society.

Being registered as a coöperative society, the dividend payable on share capital is limited by statute to 5%.

The shares are 5s. each fully paid up and each member is required to hold at least 4 shares. There is no liability attached to the shares.

No member is allowed to hold more than £200 worth of shares in the society, and it is therefore impossible for it to be controlled in the interest of any individual.

The society as well as selling the produce of its own members acts as general salesman for outside growers, but any sender can become a member of the society automatically under its rules; for each £50 worth of produce consigned to the society for sale, the consignor is entitled to one share.

After paying a dividend of 5% on its share capital the society has distributed to its members the following bonuses on the sales value of their produce:

1907	2%
1908	2½%
1909	3%
1910	1%
1911	2½%

The books of the society are open to the inspection of the members at the different depots during ordinary business hours and members can examine the details of the sales of their own produce, and of that of other members, and can themselves be present on the stands if they wish it when their produce is being sold.

The books of the society are audited by a firm of chartered accountants, and a balance sheet is issued annually to the members showing in detail the complete operations of the society.

The necessity for coöperation in agriculture and market gardening in order to secure the best results to producer and the most favourable conditions for the consumer are becoming more and more evident, and the committee ask all farmers and fruit-growers to increasingly support this society, which is practically the only organisation at present available for the disposal of produce on a coöperative basis in the London markets.

To better understand the selling methods we will trace potatoes, a typical vegetable, from the consumer back to the producer.

Most of the potatoes sold in London are sold through small greengrocers who deal only in fruit and vegetables. Their methods of selling are practically the same as those of Manchester. Retail prices vary considerably from time to time, but naturally are not so sensitive as wholesale prices. The price varies from 5 pounds for 4d. ($1\frac{3}{5}$ cents per pound) to 4 pounds for 2d. (1 cent per pound). Very good quality King Edwards could be had for 4 pounds for 3d. ($1\frac{1}{2}$ cents per pound) during the latter part of August, 1913. Nearly all of the retailers bought directly from the wholesalers in the markets at prices ranging from 90s. a ton (.965 cents per pound) to 60s. a ton (.643 cents per pound). Specific cases were noted where potatoes bought at 80s. a ton or 4s. a hundredweight sold at 4 pounds for 3d. or 7s. a hundredweight (112 pounds). Thus the grocer made 3s. a hundredweight. Another case was noted where potatoes bought at 70s. a ton (or 3s. 6d. a hundredweight) sold for 4 pounds for 2d. or 4s. 8d. a hundredweight. The profit in this case is, of course, 1s. 2d. (or 28 cents) a hundredweight. The grocer's profit varies considerably. Very often his hundredweight sack of potatoes will not weigh 112 pounds, for the potatoes are bought at wholesale by measure instead of by weight. Some grocers do not weigh out their potatoes accurately and so lose by overweight. This overweight is harder to avoid with large potatoes than with small ones.

With the dealers in general vegetables, potatoes are sold in the same way as other vegetables. But since so many more potatoes are sold than of any other one vegetable, some merchants sell nothing but potatoes. At the Kings Cross railway station there is a market where nothing but potatoes is sold. The ordinary dealer sells his stuff by standing in front of his shop and naming

his price to any buyer who asks. If the buyer is satisfied, he buys and carts it away. This is a very slow way of selling, for the buyers often go all over the market asking prices until they know where they can do the best. Sometimes the merchants sell on commission from the farmers; sometimes they buy their potatoes outright, either from the farmers or from dealers at the Kings Cross potato market.

When they sell on commission they generally charge a fixed price for selling. For potatoes in sacks this price is 6s. a ton (2240 pounds) or 6.4 cents per 100 pounds. This includes storage and handling in the shop, but not cartage, freight, or market tolls. The cartage varies from 2s. 6d. a ton to 4s. a ton. The larger merchants who have their own vans count on 2s. 6d. a ton, but if the railroad company does it, it is 4s. a ton. The railroad companies of England have their own drays to deliver freight with. Some of the dealers, especially those that specialize in potatoes, buy many of their potatoes in the ground and hire the grower or some other man to harvest them. The profits in this way are larger, but they varied so much that no significant figures could be obtained in the time available.

The price the farmer gets for his potatoes varies considerably according to the distance from a market. At Biggleswade, in Bedfordshire, about 40 miles from London, potatoes were 15 to 25s. lower than the price the grocer paid at London. The cost of raising and harvesting a crop is the same as around Manchester.

FOREIGN ONIONS AND FRUIT IN LONDON

By Emmett K. Carver

Onions from Spain and Portugal, oranges, lemons, and such products, are sold in London as they are in Manchester, — at auction. They are shipped to a broker who sells them on commission in one of the auction halls. There are two of these halls, one at Covent Garden and one in Eastcheap.

The market at Covent Garden is a large hall with eight or ten rostra. A sample of each lot of produce is displayed and the lots are sold at auction. As all the rostra are going at once, the confusion is great. In the market in Eastcheap, or City Market, this confusion is avoided. This is an amphitheater, seating 200 to 300 men, and having one rostrum. The hall is leased by four brokers, each of whom uses the rostrum for forty-five minutes at a time. These brokers issue catalogues each morning with a list of the lots they have for sale. They have a sample of each lot in the show rooms near the market, and the buyers inspect them before the selling begins, making a memorandum of the quality of each lot on their catalogues. A sample catalogue of the sales of one of the brokers is enclosed. The buyers at these sales are wholesalers from towns within a 100-mile radius of London as well as the wholesalers of London itself. The commission charged by the brokers varies with the broker, the customer, and the goods sold. For onions it was generally 2 per cent to 5 per cent.

The presence of a great number of buyers at this market has caused other dealers to come into the vicinity to sell at private sale. They have their show rooms near the market hall and frequently entice customers from the hall to their rooms.

The wholesalers who buy at this sale sell the onions to the grocer just as they do potatoes. The profits and methods are practically the same as at Manchester.

SPANISH ONIONS IN MANCHESTER

By Grafton L. Wilson

Place of production	Valencia
Place of consumption	Manchester
Price received by shipper	3s. 4d. to 4s. 3d. per cwt.
Price paid by consumer	1d. per pound
Difference between prices	4s. 6d. to 5s. 5d. per cwt.
Number of steps between the producer and consumer	Necessary, 3 Usual, 3 or 4 Possible, 5 or, in the case of onions sold by the very small grocer buying from the huckster, 6
Freight	7d. to 9d. per cwt.
Tax for handling and canal dues	6½d. to 7d. per cwt.
Brokers' margins	1.12d. to 3.30d. per cwt.
Price paid by wholesaler	4s. 8d. to 5s. 6d. per cwt.
Wholesalers' margin (average)	8d. per cwt.
Price paid by grocer	5s. 6d. to 7s. per cwt.
Grocers' margin 1s. 3d. to 3s. 7d. (average)	2s. 10d. per cwt.

The trade in Valencia onions follows similar lines to that in potatoes, with the addition of a step known as the commercial saleroom between the shipper and wholesaler.

The retail price most generally found was 1 penny per pound with sometimes 2 pounds being given for 1½d. For the best grade (No. 5) the price was in some stores 2 pounds for 2½d. The latter price was charged in the stores of the Manchester Coöperative Society, but the Pendleton Society received the usual price of 1d. per pound.

The prices at wholesale in the market ranged from 5s. 6d. to 7s. the hundredweight, with an average of 6s.

The onions come in boxes of light wood holding 1 hundredweight which are divided into three compartments. The onions are carefully graded, and the grades are numbered 4, 5, or 6,

according as there are 4, 5, or 6 onions in a row in each compartment. This case is sold with the goods and usually goes into kindling wood.

It is in the commercial saleroom that the handling of onions differs from that of potatoes. It is a large room with one hundred and sixty-eight seats, in the form of an amphitheater, with an elevator in the center and behind this a raised "rostrum." This room, together with three suites of offices and a grape showroom, is the property of the corporation of Manchester. The use of it and the grape showroom, with the basement and a suite of offices each, is rented to three brokerage firms for £150 per year. They also pay 3 d. per minute for the use of the rostrum to the corporation. The rent charged is the same as that charged at the beginning of the undertaking and was put low in order to boom Manchester as a port. It will probably be raised in the near future. These brokers are associated and charter boats which bring produce direct from Spain to Manchester by canal from Liverpool. The sales take place whenever a cargo arrives, the time being advertised together with the amount and description of the produce to be sold. The selling is all by auction, and the buyers, of whom the number is limited, are wholesale dealers from all the cities and towns of the region, some coming, also, from the distant, larger centers. Each broker is allowed in turn forty minutes on the rostrum, then, if necessary, thirty minutes more, and after that he may have another fifteen, the other two having had each thirty minutes. Each makes out a list or catalogue of his goods, giving the grade, trade mark of shipper and number of cases in a lot. A sample of each lot is brought up on the elevator, which is in two sections which alternate in such a way that there is always a sample before the buyers. The sample is marked with the lot number, and the whole lot is sold to the highest bidder. Each broker has his own employees, who manage his goods while he is selling, with the exception of the man at the elevator, who is employed by the corporation of Manchester. The prices ranged from 4 s. 8 d. to 5 s. 6 d., with an average of 5 s. $1\frac{1}{2}$ d. or 5 s. 3 d.

The brokers charge a commission of 2 per cent to 5 per cent according to contract. The freight which is charged the shipper is 7d. to 9d., and $6\frac{1}{2}$d. to 7d. is charged to cover the handling and canal tolls. From Manchester it was impossible to trace onions farther back than the Spanish shipper.

POTATOES IN MANCHESTER, ENGLAND

By Grafton L. Wilson

Place of production	Near Manchester
Place of consumption	Manchester
Price received by producer	2s. 6d. to 3s. 3d. per cwt.
Price paid by consumer	2d. to 5d. per 5 pounds.
Difference (average)	2s. 6d. per cwt.
Number of steps between the producer and consumer	Necessary, 2 Usual, 2 or 3 Possible, 5
Price received by shipper (if any)	60s. to 65s. per ton
Shipper's margin	2s. 6d. to 3s. per ton
Price received by wholesaler	2s. 9d. to 5s. per cwt.
Wholesaler's margins	3d. to 6d. per cwt.
Price received by jobber (if any)	3s. to 5s. 3d. per cwt.
Jobber's margin	3d. per cwt.
Grocer's margin (average)	2s. 10d. per cwt.

The retail prices for potatoes at Manchester ranged from 5 pounds for 2d. to 1d. per pound, being usually 5 pounds for either 3d. or $3\frac{1}{2}$d. The lower prices were in poorer sections only and were for an inferior grade of potatoes. Those at 5 pounds for 4d., $4\frac{1}{2}$d., or 5d. were of high quality and were found only in stores catering to the middle or higher classes. The coöperative stores of the Manchester Society were selling at one shilling the score, which is at the rate of 5 pounds for 3d., and the Pendleton Society sold at 1s. 2d. the score or at the rate of 5 pounds for $3\frac{1}{2}$d.

Rents for retail stores range from 6s. a week (£15 12s. a year) in the poor sections to £1 a day for the larger establishments. The average, which would represent the bulk of the trade, pay £25 to £40 per year. A man paying £25 would pay in

addition a tax of 8s. on the pound, 15s. water tax, and a house duty of 5s. paid on all houses over £20 per year in rent. The assessment is made lower than the actual rent paid, so that this man would pay about £34 for his store. The large majority paying £25 per year or more do an order business and deliver, and often the lower-class men will have a boy to deliver in the immediate neighborhood. Wages for a boy of from sixteen to eighteen years are about 12s. to 16s. per week; from eighteen to twenty years old, £1 per week; and for a good man, 25s. to 30s. per week.

The wholesale prices were from 2s. 9d. to 5s. 6d. per hundredweight, differing largely for the different varieties, qualities, and salesmen. The quotations which are published in the newspapers are made up in some cases by market reporters, but more often on information furnished by large merchants, both wholesale and retail. They seem to be fairly accurate but rather unsatisfactory, as the range given is often very large.

As nearly as it was possible to find out, potatoes retailing at 5 pounds for 3d. would cost 3s. 3d. to 4s. per hundredweight at wholesale; those selling at 5 pounds for $3\frac{1}{2}$d., about 3s. 9d. to 4s. 6d. per hundredweight, etc., according to conditions, the higher grade potatoes bringing larger profits. It was impossible to get these closely, as the grocers often pay slightly different prices for the goods retailing at the same price, and the different retailers pay different prices. The wholesale prices also varied very much according to the dealers, and there were very large fluctuations due to the sudden changes of the supply when new districts began to send. The shortage due to shrinkage and slack weights varies very much, but taking it as $\frac{1}{8}$ hundredweight in a ton or 2 pounds in a hundredweight, we can compare the wholesale and retail prices as follows:

Buy @ 2s. 9d. per hundredweight (112 lb.)	
Sell 110 lb. @ 5 lb. for 2d.	Difference, 11d.
Buy @ 3s. per hundredweight	
Sell 110 lb. @ 5 lb. for $2\frac{1}{2}$d.	Difference, 1s. 7d.
Buy @ 3s. per hundredweight	
Sell 110 lb. @ 5 lb. for 3d.	Difference, 2s. 6d.
Buy @ 3s. 6d. per hundredweight	
Sell 110 lb. @ 5 lb. for 3d.	Difference, 2s.

Buy @ 3s. 6d. per hundredweight
Sell 110 lb. @ 5 lb. for $3\frac{1}{2}$d. . . . . Difference, 2s. 11d.
Buy @ 4s. per hundredweight
Sell 110 lb. @ 5 lb. for $3\frac{1}{2}$d. . . . . Difference, 2s. 5d.
Buy @ 4s. 6d. per hundredweight
Sell 110 lb. @ 5 lb. for $3\frac{1}{2}$d. . . . . Difference, 1s. 11d.
Buy @ 4s. 6d. per hundredweight
Sell 110 lb. @ 5 lb. for $4\frac{1}{2}$d. . . . . Difference, 3s. 9d.

In order to get a rough estimate of the profits of the grocers, 6d. per hundredweight may be deducted to cover the hauling from the market to the retailer's store, the rents, wages, etc. The hauling is usually done by the grocers themselves, except in the case of the small dealer who pays the following prices for the carrying of his supplies to his store: for small push-cart load, by porter, from 3 to 5 miles, 2s. 6d., varying up to the large loads carried by the "car men" for 4s. 6d. to 5s. per load for the same distances. The resulting profit would seem to be, generally, about 5s. in the £, or 25 per cent, which was also the figure given as an estimate by several grocers and others connected with the trade.

Practically all the potatoes consumed in Manchester pass through the Smithfield Market. There are two methods of taxing those selling on the market. (*a*) There is a class of men paying tolls. This class numbers between 300 and 400 and includes the growers coming from a radius of 12 to 15 miles to sell their own produce and a part of the so-called "hucksters," who will be mentioned later. (*b*) The second class, numbering about 400, are regular tenants, paying an average rent of 1s. per square yard. Formerly, this was the maximum rent, but four years ago a new scale of charges was put in force, with a maximum of 1s. 6d. per square yard and a minimum of 10d. per square yard. The revised scale can, however, be applied only to those tenants holding stalls under a new or revised contract for a period of seven years following its institution, after which it will be applied to all stall holders.

All carrying in and about the market is done by porters who are licensed by the Manchester corporation for 2s. per year, and in addition to this, they must make a deposit of 2s. 6d. for their badges which are of copper and brass on alternate years, in order

that the authorities may enforce the renewal of the license each year. There are between 600 and 700 porters. The ordinary charge for porterage is 1 d. per package, and the porter must return the container to the wholesale dealer after it has been emptied by the buyer. In case a porter loads the full containers on a grocer's cart, he is also bound to unload and return them when brought back empty by the grocer.

Potatoes are sometimes sold on commission and sometimes bought outright by the wholesalers. The commission is generally 3 d. the hundredweight (5 s. the ton), and the average profit, if bought outright, is from 5 s. to 10 s. per ton, the latter varying greatly. When sent to Manchester on commission, all the expenses connected with the sale of the potatoes are charged to the sender, but otherwise it is according to contract whether the wholesaler or sender pay the expenses. These expenses are, besides the commission: cartage from the station, which costs 1 s. 8 d. per ton if done by the railroad and about 1 s. 6 d. if done by the wholesaler; porterage 1 d. per hamper or bag; and storage at the station of 3 d. per ton per day after the first forty-eight hours. The dealers who are known to be very reliable and sell in very large quantities carry on a large trade in produce sold directly from the station (ex the station), thereby saving cartage and handling in the market. The buyers, as a rule, however, like to see their goods before purchasing, especially as there is no standard and the buying is done, to a great extent, on the personal judgment of the buyer as to the actual weight, and on his knowledge of the wholesale dealer from whom he gets his goods. This lack of a standard is strongly contended against by the retail grocers, who are often caused very appreciable losses. They wish to have the net weight marked on all containers, but nothing has yet been accomplished in this line.

The market contains dealers who might be classed as follows: The man with large capital, having representatives abroad and possibly his own cars or boats, who does a very large, strictly wholesale business. In some cases these men are also growers. Second would be placed the man who has built up a large business without much capital. There are about 100 men or firms

who would come under one of these heads and might be termed strictly wholesalers. From these may be graded 250 merchants who, to a certain extent, buy merely to sell again on the same market. There are some wholesalers who also buy on the market whenever there seems to be a profitable occasion or when it is necessary in order to fill out their lines. There are others buying only on the market, having perhaps one or two small growers who send produce from time to time. At the end of the list would come the so-called hucksters, who buy odd lots of poor goods and sell to the street hawkers and smallest grocers. There are about 150 of these hucksters, of whom only 50 are stall holders, the rest paying toll and selling in the streets or squares close to the market. In addition to these dealers, there are 200 to 250 growers who bring in their own produce and pay the above-mentioned tolls for the right to sell in the streets and squares near the Smithfield Market. As regards the profits of these various dealers, it is very hard to say exactly; but for all produce the average wholesaler's commission is about 5 per cent, which is often raised to $7\frac{1}{2}$ per cent for English goods when empties are supplied. The profit of the men buying to resell on the market was estimated at about 3d. per package.

The Manchester market is noticeable for the specialization among those doing a wholesale business. Thus, there are two dealers handling almost entirely finest and out-of-season fruits for the highest-class trade, while there are others handling only local vegetables, and so on. This may be one reason for the large number of men who buy on the market to resell at wholesale on the same market, as they assemble in their stalls all lines of goods and can afford to sell small quantities where the strictly wholesale dealer with his specialized trade might not wish to sell the small amounts required by the very small grocer. Another reason for the amount of trade done by these intermediate dealers on the market is that the retail grocer wishes to see his goods before buying and so does not like to order from the wholesaler the day before. The intermediate men do this and are also on hand to buy very early in the morning, with the result that, when the retail grocer comes to get his supplies, he must take from

the intermediate men, as there is none of certain lines left in the hands of the real wholesalers.

Some of the largest retailers are also wholesalers in a sense, as they supply other small retailers in their neighborhood, making about 3d. per package on the transaction. The grocers are fighting hard to have the market made up of wholesalers only, but so far nothing has been done. It would seem to be very difficult to define a true wholesaler and regulate the selling accordingly. The grocers are also fighting against two forms of competition which they consider unfair: (*a*) the hawkers who have push-carts and sell vegetables in the poor sections or have more fixed stands and sell fruit on the business streets, and (*b*) the custom of some of the wholesalers on the market of fixing up their stalls a little on Saturday afternoon and evening after the business is over, for retailing fruit. At this time there are large crowds who come for the general market in the surrounding district and, in strolling through the market, spend a few pennies on fruit. This does not seem to be a competition against the average grocer, however, as the fruit would probably not have been bought at all, if it were not for the general market. As has been mentioned before, the slack weights are a point of contention for the grocers who are working for the compulsory marking of net weights. Another point which they are working to obtain is the abolishing of the system of returnable empties. They claim that it is an unnecessary bother and expense to return empties and that there is a large chance for fraud by the porters who have in charge the returning of the empties and at the same time handle the money which the grocers have previously paid as a deposit to the wholesalers.

With unreturnable empties, the leakage caused by the loss of empties or the failure to return them would be abolished. This leakage is, of course, at the expense of the grocer, who has paid a deposit on them, and in some cases might amount to quite a large sum. They claim that the unreturnable empty would benefit the wholesaler and shipper or grocer as well, as there would be no up-keep or storage and a much smaller cost. This is especially the case for the Jersey potatoes which come in the grape barrels,

which are often not of uniform size, are very wasteful of space in boats and carts, and, as the season lasts only about six weeks, are very expensive to store.

The containers for potatoes during the summer months are of two kinds: (*a*) Hampers of wickerwork, holding a hundredweight. They cost about 1s. 8d. and 1s. 6d. or 2s. Deposit is made for them by the grocer buying from the wholesalers. (*b*) Also small barrels holding 80 pounds, which are used largely from the Lancashire districts and from Jersey. These are old grape barrels and cost with re-coopering and stringing 1s. 6d. apiece. The former are the property of the Manchester wholesalers, and the latter of the shippers or middlemen of the sections and are returned at the expense of the wholesaler. Some of these middlemen buy barrels at $2\frac{1}{2}$d. or 3d. apiece and 8d. for a better grade and have a man to re-cooper and string them. Later, when the potatoes are harder, bags are used, holding 1 hundredweight and costing 7d. These make, as a rule, several trips and are usually the property of the wholesaler. In the summer the potatoes are dug right into hampers or barrels, as the case may be.

In Lancashire to a large extent and also in other sections about Manchester, there is one man between the grower and the wholesaler who is called a middleman. He buys outright from farmers and then either sells or sends the goods on commission to the wholesaler. In Ormskirk, about 40 miles from Manchester, these middlemen supply to the farmers the above-mentioned barrels, charging a deposit of 1s. The farmer must cart to the station and load on the cars, the only function of the middleman being to find a market, supply empties, and occupy himself with the details of selling, shipment, etc. For these services his profit is about 2s. 6d. per ton on an average, and when he supplies bags and men to help pack them, he makes up to 5s. the ton. During the summer the profit averages above 2s. 6d. The price of the middlemen to the wholesaler is 60s. to 65s. per ton. The freight to Manchester is 7s. 3d. per ton if 2 tons are sent, 6s. 8d. if 4 tons are sent.

The farmers near Ormskirk were getting about 55s. to 60s. per ton for their potatoes, the middlemen all paying the same

price on any given date to all farmers. The farmers can, however, get about 15s. more by carting to Liverpool, at an expense of, roughly, 7s. 6d., thus netting a profit of 7s. 6d. more per ton than they can get by sending to middlemen. This is done as much as possible by the farmers who themselves cart and sell at the Liverpool market, paying a toll of 3s. per one-horse load and 3s. 6d. more per two-horse load. The farmers have attempted to eliminate the middleman and sell directly to or through the wholesalers by combining together for shipment, but this has never proved practical on account of jealousies and lack of business ability among them.

Below is a rough estimate of the cost of growing an acre of potatoes:

25 tons manure at 10s. per ton	£12	10s.	
12 cwt. seeds at 4s. cwt.	1		
To plough twice	1		
To make rows	1	5	
To set seed		15	
Cover seed		7	6d.
Care, weeding, etc.	1		
	£17	17s.	6d.

To this must be added the cost of digging, handling, cartage to station, storage, etc., which would bring the total cost to £20 or £25. Some farmers gave a higher estimate than this, but it would seem to be a fair one for the section. Wages for farm hands are from 20s. to 25s. a week.

Taking the average yield as 10 to 13 tons per acre, the profit would average from £16 to £18 per acre, as nearly as can be reckoned under the varying conditions.

In Cheshire the farms are often larger, and a large number of farms send directly to the wholesalers who supply hampers, charging, sometimes, a rent of ½d. per hamper. The prices received by the farmer, which are clear except for expenses of carting to the station, were, when visited, 3s. 3d. to 3s. 6d. per hundredweight, according to distance, quality, state of market, etc. The freight from one of the centers to Manchester was 6s. 6d. delivered in the market.

VIII. AGRICULTURAL POLICY

THE IRISH LAND PURCHASE ACT OF 1903

By C. F. Bastable

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[Footnotes are omitted from this reprint. The reader is referred to the original article. — Ed.]

THE Irish Land Act, which has been the principal work of the legislative session of 1903, is remarkable in several respects. But its chief significance lies in the fact that it definitely binds all parties in Great Britain and Ireland to that particular method of solving the land question often described as the "abolition of dual ownership." It thus marks an important and probably decisive stage in the tedious process of recasting the agrarian system of the country and removing the obstacles that have hampered the operation of earlier measures of reform.

So many have been the discussions on the political and economic aspects of this great branch of the Irish problem that all persons even moderately interested in such inquiries are well aware of the way in which the existing land system has been formed. Beginning with the application of the English common law to Irish tenures in the opening years of the seventeenth century, it was further affected by the series of confiscations which only ceased at its end, as well as by the extensive Plantation of Ulster. The position in the eighteenth century was that of a body of landowners, many of them not residing in the country, and distinct both in race and religion from the actual cultivators who made up the great body of the people. In this way the "cottier" system — which Ireland may claim to have originated

— came into being. Under it the peasant cultivator possessed of little capital bid directly for the privilege of occupying land. As a result, rents were raised to the highest point; and, though they were often merely nominal, being subject to abatements in times of pressure, they yet represented the full surplus produce after the wants of the laborers under their low standard of subsistence had been supplied. The growth of population and the immense expansion of Great Britain due to the great series of inventions in the period 1760–1785 still further affected Irish agriculture. Under the cover of the corn duties (and the earlier bounties) tillage was considerably extended, in order to supply the English market. The high prices that accompanied the French wars worked in the same direction. This unhappy system was overthrown by the great famine of 1846–1847. But the seeds of decay were implanted before. The miserable condition of the cultivators, the defective methods of agriculture, and the heavy burden of indebtedness which pressed on the landowners made a change imperative and also certain, whenever free trade in corn should be adopted by Great Britain. But the need for reform in the conditions of tenure had been urged before the famine, in the form of a claim for "tenant right," which would protect the improvements of the farmer, and which existed by custom in the Ulster Plantation counties. Sharman Crawford's bill for a compensation for improvements was introduced in 1835. "If," said O'Connell in 1845, "they asked me what are my propositions for relief of the distress, I answer first tenant right. I would give the landlord his land, and a fair rent for it; but I would give the tenant compensation for permanent improvements."

The actual legislation was of a very different tendency. In 1848 the Encumbered Estates Court was established; and by its agency the landowners most heavily in debt were weeded out, their place being taken by a more provident and enterprising class. To secure this result, the stringent rules of real property law were set aside, and estates were in many cases sold at very low prices. The "commercial principle" was still further applied to land in 1860 by Dardwell's and Deasy's acts. The whole system of tenancy was based on contract, not on tenure, and thus

the feudal conception was definitely removed, while the various provisions of the law were consolidated in a convenient form. During this period various compensation bills introduced by both Conservative and Liberal governments had failed to pass; and insecurity of tenure, increased by the events of the famine and the action of the new proprietors, became a cause of political and social unrest, which culminated in the Fenian movement. This led directly to Gladstone's first land act (1870), the earliest definite effort to deal with the grievances of the Irish tenant, as distinct from reforms calculated to raise the efficiency of agriculture. It recognized the body of usages which formed the Ulster custom; it laid down broadly the principle of compensation for the tenants' improvements; it introduced the new system of compensation for disturbance, intended to impose a penalty on evictions; and, finally (by the "Bright" clauses), it sought to make sales by landlord to tenant easier. This well-meant attempt proved to be quite inadequate for the purpose, especially when a new period of agricultural depression, starting from the bad harvests of 1877 and the following years, made the payment of rent difficult. The fierce agitation of the Land League (1879) was met by the act of 1881, which accepted the system of (1) "fixity of tenure" and (2) "fair rent," with the right of (3) "free sale" by the tenant of his interest (the three F's) and created a special commission with power to determine the "fair rent" of the usual tenant holdings. Unfortunately, this adoption of the policy long advocated by the popular party in Ireland came at a time when the value of land was falling in all western Europe, and the newer idea of a complete expropriation of the landlords had taken the place of the older plan of fixed tenures in the Irish programme. The operation of the act was viewed with suspicion by both landlords and tenants. Though its immediate effect was a lowering of rent by over 20 per cent, this was believed by the latter to be insufficient, and was treated as confiscation by the former. The purchase clauses of the act failed almost completely, and thus further legislative action became expedient. But all these later measures have been passed by the Conservative and Unionist party. In 1885 the "Ashbourne"

Act established a fund of 5,000,000 pounds (increased by 5,000,000 more in 1888) for purchase, and relieved the tenant from providing part of the purchase-money. In 1887 the fair-rent provisions of the act of 1881 were extended to the lease-holders, and temporary reductions of rent, based on the movement of prices, arranged. Mr. Arthur Balfour's measure of 1891 introduced a complicated system by which additional funds for land purchase were guaranteed by the several Irish counties through the grants given to them from the State. In 1896 the tenant's right to improvements (which had been impaired by a series of judicial decisions) was further defined and secured, while more lenient rules for the repayment of the purchase advances, securing a reduction to the purchaser at intervals of ten years, encouraged the transfer of land from the landlords to the tenants. Besides this varied legislation there were many abortive attempts—e.g., Mr. Morley's bill of 1895—to deal with the many difficulties of the problem which each change in economic conditions brought into notice. Thus the special position of tenants under the Ulster custom; the right of the landlord to pre-emption of a holding offered for sale by its occupier, and to have its true value fixed by the Land Commission; the treatment of tenants who had been evicted, and of those who had taken their farms; and the claim of the agricultural laborer to obtain a house and an allotment of land—all these had attracted public attention.

Two influences were, however, of peculiar importance in hastening on the act of 1903. One was the strong movement in favor of compulsory purchase initiated by Mr. T. W. Russell and supported by the Protestant and Unionist farmers of the North. Another was the increasing difficulty experienced in keeping up the agitation connected with the Irish party's policy. A general recognition of the loss that long-continued disturbance inflicts on all classes made conciliation or compromise seem desirable. To these must be added the disposition of English statesmen to deal more liberally with Ireland, in order to raise her material condition and thereby remove the source of political discontent.

The views of the government were decidedly indicated in the Land Purchase Bill introduced in 1902. Its principal feature

was the proposal for direct purchase of estates by the Land Commission, for which purpose additional funds were to be provided. An application for a readjustment of rent might be met by the other party applying to the commission to state the fair terms of sale, which, if not accepted, would prevent any alteration of rent.

This last part of the bill was strongly opposed by the tenant's advocates as an infringement of the right secured by the act of 1881, and all parties seemed to hold that still more inducement to purchase should be given. The measure was accordingly withdrawn with a promise that an Irish land bill would be the chief piece in the programme for the following year. In the meantime active efforts were made to bring about a conference between the representatives of landlords and tenants, which should come to an agreement on the terms of settlement to be submitted to the government for embodiment in the new bill. Though the official body representing the owners (the Landowners' Convention) declined to take part in a conference, a number of landlords agreed to the plan; and four representatives of this section met four members of Parliament who were regarded as tenants' representatives, and after discussion put forth a statement in which the most noteworthy points were: (1) the assertion that an occupying proprietary in lieu of dual ownership was the only satisfactory settlement of the question; (2) that the landlords' income (defined to mean rents fixed since 1896) should be secured to them; (3) that owners should be allowed to purchase their mansion houses and demesne lands; (4) that the expense of proving title and delay in payment of the purchase-money should be removed; (5) that the tenants' annuities should be such as to give an immediate reduction, varying from 15 to 25 per cent, with further reductions as the process of repayment went on, which would involve the aid of the State. The laborers, the Congested Districts, and the evicted tenants were also recommended to the consideration of the government.

Although originally hostile, the Executive Committee of the Landowners' Convention accepted the Conference Report as "a valuable addition" to "the suggestions that had been made for

removing the difficulties of the Irish Land Question." General approval was also expressed by the great body of Irish farmers.

Under these exceptionally favorable conditions, Mr. Wyndham brought in his revised scheme, which was set forth in a speech of remarkable clearness. The difficulties of the problem were sketched, and also the necessity of dealing with it. The extreme complication of tenures and the many interests requiring consideration, as well as the mass of previous legislation, formed the greatest puzzle. The deterioration in agriculture from the absence of inducements to investment on the part of either landlord or tenant and the evil moral effect on the farming class made it essential to deal boldly with the matter, which was also desirable in the interest of Great Britain as a neighboring country, necessarily affected by Ireland's prosperity or distress.

Before considering the details of the bill, we may notice two features, one of which has been removed and the other altered in the act finally passed. As at first planned, the annuity to be paid by the purchaser was to be divided into two parts, one (seven-eighths of the whole) redeemable by instalments running over sixty-eight and a half years, the other and smaller portion to be perpetual. The idea underlying this reservation of rent was to give to the State a power of control over the holders of land, in order to prevent subdivision and mortgaging, and also possibly for other objects. The Tenants' Convention held a few weeks after the appearance of the bill declared strongly against this limitation, which was surrendered in committee. Again, in the first schedule of the bill a graduated scale for the bonus to be given to selling landlords was set out, varying from 5 per cent on estates over £40,000 to 15 per cent on those not exceeding £5000. This schedule is absent in the act, where a uniform bonus of 12 per cent is laid down. But besides these unessential matters there was very little change. The general trend of opinion in Ireland was expressed by the votes of the Tenants' Convention just referred to, and also of the Landowners' Convention in favor of the measure.

English people of all parties were ready to acquiesce in what seemed likely to solve the Irish Land Question. Criticism was

restrained by the fear that in some way or other it might wreck the bill. The result was that the second reading passed by an enormous majority, and the amendments in committee were few and comparatively unimportant. One serious amendment proposed by the Nationalist leader — namely, (1) the adoption of the minimum reductions laid down in the Conference Report (25 per cent for first-term and 15 per cent for second-term rents) and (2) the removal of the maximum limits of reduction fixed in the bill — was negatived. The amount of advance permissible was increased; but, speaking broadly, the measure passed the Commons unaltered.

In the Lords its course was equally smooth. Some amendments, carried against the government by the votes of the Irish peers, were rejected by the Commons and not pressed by the Upper House.

The keynote of this elaborate piece of legislation is to be found in the fact that it is essentially a land-purchase act, and therefore intended to set aside or rather make unnecessary the act of 1881, which was as essentially a rent-fixing act. It is true that there are provisions to assist purchase in the Land Act of 1881, and provisions as to the hearing of fair-rent cases in that of 1903; but in each case they are subordinate to the main purpose, and are hidden away, so to speak, in an obscure corner. This change marks the advance made in the intervening period. What is regarded as highly conservative in 1903 would have been denounced as revolutionary in 1881.

Starting, then, with the principle of assisting the transfer of land to the occupier, the new act provides several ways. First, the previous system of individual dealings between owner and occupier remains open to those who desire to employ it. But the transaction will have to be examined, as at present, and the security found to be sufficient by the Land Commission. Further, the selling landlord will receive only the capital of the annuity without any bonus; and there is no limit, either maximum or minimum, as to the reduction gained by the purchaser. Even in this case the advantages conferred by the act are considerable; for the selling owner receives cash instead of

land stock, and the interest on the advance is reduced to $2\frac{3}{4}$ per cent, $\frac{1}{2}$ per cent being added for the sinking fund. On the whole, it is improbable that sales to individual tenants will continue to any considerable extent.

The second method is that of agreement between landlord and tenants for the sale of a whole estate. The mode of procedure is simply for the parties to come to terms as to the price to be paid to the landlord, or — the same thing under another form — the amount of reduction which the tenants will receive on their present rents. Here an important condition has been laid down, namely: that for rents fixed after 1896 the reduction must be not less than 10 or more than 30 per cent; for those fixed earlier — the great number of first-term rents — the reduction must be between 20 and 40 per cent. Though this establishment of "zones," as they have been styled, has been much criticised, it possesses decided advantages. The commissioners must accept any agreement which satisfies the condition as to reduction, and the administrative and legal delays which have hampered land purchase in the past are to a great extent removed. Besides, the minimum limit secures the State against having to advance an amount exceeding the value; and the maximum one protects the interests of head landlords, encumbrancers, and the holders of reversions from being sacrificed by a life owner or an encumbered one. There remains in addition a discretionary power on the part of the Estates Commissioners to sanction sales outside the limits, if adequate reason be shown. The probability is that most of the sales will be carried out by these agreements, arranged directly.

Another form of purchase, developed from the ineffective provisions of the second Gladstone act, is that in which the owner sells to the Land Commission for resale to the tenants. Here the owner applies to the commission, and it after inquiry makes a proposal to purchase, if tenants of three-fourths of the holdings in number and ratable value are willing to buy at the estimated price. In special cases the last restriction may be removed, — i.e., if there is no fear of loss, — while, in the case of "congested estates," loss up to 10 per cent may be risked.

The commission can also arrange to buy estates ready for sale in the Land Judge's Court, where so many encumbered properties have been lying for disposal since the opening of the agricultural depression. How far these extensive powers will be brought into use is somewhat doubtful. When a small minority of the tenants on an estate decline to purchase, they will certainly be used, the dissenting tenants being in such cases made compulsory purchasers.

Finally, the Congested Districts Board — a body established in 1891 for the improvement of the the backward districts of Ireland — receives additional assistance for purchasing estates and redistributing the land amongst the tenants in the most beneficial way.

By these several methods it is certain that there will be in the aggregate a very considerable transfer of land to the occupiers, accompanied, in the case of the poorer parts of the country, by a readjustment of holdings in order to bring them to a suitable size. But there are important sections of the farming class that are placed outside the effective operation of the measure. Judicial tenancies — i.e., tenancies on which a fair rent has been fixed, either by the court or by agreement—are alone directly regarded. But the total number of first-term rents fixed at the opening of 1903 was 342,000; of these over 87,000 had obtained a second term. The area covered by these operations is 10,228,000 acres, or one-half of the whole country. The total number of holdings is over 490,000 and this would seem to leave a very large residue (150,000) placed in a less favorable position. Two considerations, however, somewhat reduce this formidable number. Many holdings close to towns — the so-called "town parks" — are not fit subjects for purchase; and then there are over 70,000 holdings already purchased by their occupiers. Making due allowance for these classes, there will probably be about 100,000 holdings outside those forming the "estates" with which the act deals. They must remain for the process of individual bargaining. Another limitation is contained in the prudent regulation that the Land Commission shall not have more than £5,000,000 worth of land in its own hands.

Passing from the methods of purchase, we come to the special machinery created by the act. This is the Estates Commission, composed of three members, administrative, not judicial, in character. The importance of thus bringing the commissioners under the control of the Executive and making their system of working more elastic can hardly be overestimated. The extent to which judicial stringency has retarded the working of the purchase system is difficult to realize. It may be expected that the new commissioners, carefully selected for their competence, will apply sound business methods in their department.

The extraordinary delays in examining the titles of the properties for sale will not be likely to recur in the future, especially as anyone in receipt of the rents for six years can practically be treated as the owner for the purpose of selling, though not entitled to receive the purchase-money without the adequate proof.

The powers of the Estates Commissioners are sufficiently extensive to enable them to improve the property passing through their hands. Sporting rights, rights to minerals, etc., may become vested in them; and there can be little doubt that they will use their powers. The real danger is rather that of a too paternal system being developed by the action of the various State departments engaged in fostering the Irish peasants, with evil results in checking the growth of a spirit of independence and individual activity in economic matters.

An elaborate system of transfer, such as that just sketched, needs as its basis a carefully organized financial provision; and it is here that the special interest of the British tax-payer comes in. The course of development in this part of Irish land legislation has been a gradual increase in the assistance given by the State to the process of purchase. Beginning with the advance of a portion of the price to aid the thrifty buyer, it has gradually changed into the payment of the whole purchase-money by the State to the seller, the tenant-buyer paying off principal and interest by instalments. The act of 1903 puts the system on a revised basis. The chief points in this remodelled plan are: (1) The payment of the price in money, the amount being determined by the annuity which the purchaser is to pay. (2) The

requisite funds are to be obtained by the issue of British government stock bearing $2\frac{3}{4}$ per cent interest, and not redeemable for thirty years. (3) The advances and the interest on the stock come from a special fund described as the Irish Land Purchase Fund (section 27), which is to be fed by the issues of stock and the payment of annuities. (4) By a supplementary act of 1903 an Irish Development Grant has been created, and it will contribute £50,000 annually to the purchase fund. The Guarantee Fund under the act of 1891 is also a possible contributory. (5) But behind all these particular contrivances there is the credit of the British State. It is this that will enable the necessary funds to be raised on reasonable terms. Apart from this powerful lever the system would be impossible; for the interest on a purely Irish loan would be such as to leave no room for reduction of the tenant's annual payments, or else offer no inducement to the owners to sell. (6) A still greater effect is likely to follow from the grant of a bonus to the seller of complete estates. This gift is fixed for five years at 12 per cent on the purchase-money of each estate; but the total amount to be so granted is limited to £12,000,000, and is to be obtained by issues of the $2\frac{3}{4}$ per cent land stock. The result will be that, when the whole bonus has been granted, the charge for interest and sinking will be £390,000 per annum. In the earlier years of the process it will of course be much less, and will finally diminish as the work of redemption goes on.

It is possible from the foregoing details to estimate roughly the burden placed on the British Exchequer. Under existing conditions in the money market most of the land stock will be at a discount, amounting at first probably to 3 or 4 per cent. It is also true that the successive issues will tend to lower the government funds, as the total may in fifteen years or less reach £100,000,000 or even £120,000,000. Then there is the risk of non-payment of annuities and loss in selling portions of estates. When the £12,000,000 to be allotted as bonus is added, the outside limit of liability may be put at £20,000,000; and this will be spread over a long period. Bearing in mind the history of this and other Irish questions, there does not

appear to be any reason to regard the charge as excessive, since it is the price of relief from a difficult and expensive situation.

Though the features already noticed are those of most importance, the act contains in its one hundred and three sections a great deal of serviceable legislation on special points. Thus the powers of trustees in respect to investment are enlarged, and the office of public trustee created. Of still wider effect is the provision that the owner, when selling an estate, may himself repurchase his demesne or other land in his occupation in the same way as an ordinary tenant. The aim of this concession is, besides encouraging sales, to offer an inducement to resident landlords to remain in Ireland, and take part in the working of local government as well as to supply examples of better agricultural management. It is difficult to say how far this expedient will prove successful. Though all owners who can do so will rebuy their demesnes, it is likely that most of them will soon dispose of this remnant of their property, for which they can easily obtain a good price.

Another troublesome question is that of the position of evicted tenants. This has been met by allowing any one "who within twenty-five years before the passing of the act was the tenant" to purchase a parcel of land (presumably his former holding); but in such cases the advance is limited to the amount of £1000 (unless the Land Commission consider that a larger amount will not prejudice other claimants). This section was the result of a compromise between the government and the Irish party, and was keenly debated. It leaves open the difficult question of the position of the new tenants who have taken evicted farms. Are they to be allowed to retain their holdings, or shall they receive compensation?

In accordance with the bad precedent set in so many previous acts, there are, as already noticed, certain sections dealing with the fair-rent courts and the laborers, tacked on to the main body of the land-purchase enactments. The subcommissions for fixing judicial rents will for the future consist of one legal and only one lay assistant commissioner. In appeals one judicial commissioner, assisted by a lay assessor, will form the court. There

may therefore be two, or probably more, Appeal Courts in operation, as any judge may be nominated as an additional commissioner. The evident object is to secure greater rapidity in dealing with cases, and remove the congestion in the Land Courts.

The amendments to the Laborers' Acts are merely a new definition of an "agricultural laborer," and the recognition of the wishes of the applicants in the choice of sites for cottages. The fuller treatment of the workers' case is reserved for further legislation, which is promised for next year; but this under present political conditions is rather doubtful (which is to be regretted), as the laboring class in Ireland is the one which presents the chief problem for the future. Even though it has improved since the time when the Devon Commission reported that "the Irish laborer was the worst fed, worst clothed, and worst housed in Europe," there is much room for further advance. The chief hope of the agricultural worker lies in the opening up of opportunities for the acquisition of land by the use of energy and thrift.

The question of greatest interest in connection with the new act is, of course, How will it work for its admitted purpose, the transfer of Irish estates to the tenants? So many attempts have been made that it seems absurd to expect that the present measure is to be the final one. It is almost certain that a pressing claim will be urged for increase of the donation of £12,000,000 provided to "oil" the wheels of the system; and some concessions on this head may be expected, particularly if any Irish funds or British grants to Ireland are available. Then there is some reason for thinking that the administrative working of the act will not be as rapid as is generally desired. Though the new commissioners will be more energetic, and the examination of titles much simpler, yet some inquiry will be necessary, and there will be delay in working out the details of transfer. If land to the value of £5,000,000 or £6,000,000 *per annum* changes hands, it will be as much as can reasonably be expected. The total period over which the operation would extend would then run to twenty years.

More serious still is the fact that a large body of occupiers will not be able to take full advantage of the new facilities. Non-judicial tenants and those with very large holdings will ask for some aid towards purchasing, and here the hostility of the Nationalist party to the holders of large pastoral farms — "cattle-ranches," as they are called by imitation from America — will prove an obstacle. The Congested Districts Board may buy in and re-allot such land; but this course will not tend to the economic advantage of Ireland, where different types of farming are required, and where the large farmer is the pioneer of improvements.

The greatest difficulty that the new measure will have to encounter is the possible disinclination of landlords to sell, except at prices much above those which have been established under the Ashbourne Act and its successors. The idea is very prevalent among the tenants that seventeen to eighteen years' purchase of the existing rents is an adequate price; and, looking at the average price of purchase for all Ireland, it has a *prima facie* plausibility. But the variations from the average are very wide, and differ much in different counties. Thus the extreme differences run from 45.7 years to 6.2 years, which shows the extraordinary inequalities that exist. Two circumstances have to be taken into account, moreover, in considering the low prices hitherto established: (1) The insecurity of the landowners' position. Seventeen years' purchase meant capitalizing at almost 6 per cent, at a time when interest was slightly over $2\frac{1}{2}$ per cent. Sales at such a sacrifice could not continue with more settled political conditions. (2) Moreover, the sellers under the earlier purchase acts either were hopelessly encumbered or were large proprietors, who desired to get rid of their troublesome Irish estates. The London companies were specially anxious to rescue their property, even at a loss. These two classes are now practically exhausted, and further sales are only possible at higher prices. The critical matter is to determine at what point this new level will be placed. The probability is that at first the variations will be wide, running from the minimum eighteen and a half years (excluding bonus) to twenty-five or twenty-six years. As the work of transfer goes on, the average price will tend to

be higher, unless there is some serious depression in agriculture. Should stock-exchange securities not recover from their present relatively low price, the advantage of sale to the landlords, owing to the favorable opportunity for investment, will bring more sellers forward. But the main influences will be rather the general political condition and the desire to carry out the transformation in property.

That there is a general disposition on the part of landlords to sell and of tenants to buy is beyond dispute, and each completed transaction will lead to others. The advantages to the occupier of a reduction in his yearly payments with the security that his new position gives will tell powerfully in favor of purchase. To the resident landlord the prospect of getting what is substantially a loan on easy terms, and receiving a reasonable price for his rights over the land held by tenants, is not unsatisfactory. The encumbered landlord, who gets the power of clearing off mortgages and other charges, bearing a comparatively high rate of interest and thereby relieving himself of a heavy drain, will certainly try to come to terms. On these grounds there is reason to believe that the act will have a large measure of success, though at times there may be some slowing down in its operations.

It is, however, when a great number of estates have been sold and when, as is possible, the remaining landlords decline to sell, that the old troubles may reappear. Under such conditions the cry for compulsory sale will, it is said, be revived, and Parliament will not hesitate to expropriate a small minority that obstructs the settled policy of the country. On the other hand, it must be borne in mind that the very system of land purchase creates an ever-increasing body of proprietors (for the tenant purchasers are virtually such), deeply interested in the maintenance of social order. How far this moderating influence will be effective remains to be seen. It ought to prove a powerful restraint on any extreme movement.

Quite distinct from the question of transfer of land ownership from one class to another is that of the possible changes that the act will bring about in Irish agriculture. One undoubted result of the act of 1881 was the discouragement to investment of

capital on the part of the landlord, and also to improvements by the tenant. A system under which rent is periodically revised makes it the tenant's interest to let the land deteriorate; the constant litigation about improvements stops their being carried out. The intense dissatisfaction felt by both parties proves the failure of the judicial tenancy plan.

Purchase will take this dead weight off Irish agriculture and give scope for progress. The chief danger for the future in this respect is the unsuitable character of so many Irish holdings. In the Congested Districts there are small farms, or rather plots, situated on poor soil. Elsewhere large farms of good land are the rule. The best endeavors of administrators cannot speedily change this condition. The slow and steady action of economic forces is the only complete remedy, and this is only possible if freedom of movement and trade is allowed.

The energetic and the thrifty must be permitted to come to the front; the feeble and incompetent cannot be permanently left in possession of the soil. Agricultural progress, like industrial, depends on bringing forward the best men, and giving to skill and providence their due reward. A good system of land tenure is an essential prerequisite, but it is only a prerequisite; and, indeed, any form of ownership which tends to stereotype existing conditions is certain in the modern economic world to prove evil. It is, therefore, essential to the ultimate success of the purchase legislation that it should be supplemented by reform and simplification of the general land law. The complicated rights and the restraints on alienation (though the latter are much reduced), which are characteristic of the English real property law, are altogether unsuited for a land where there is a large majority of peasant owners. The small proprietor class either gradually dies out or lingers on in a distressed condition under the cost and uncertainty of the law. Legal reform is, then, absolutely necessary; and there is good reason to hope that it will be carried out in company with the process of transfer which the act of 1903 is designed to accomplish.

STATE BOUNTIES AND THE BEET-SUGAR INDUSTRY

By P. T. Cherington

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STATE bounties as a method of stimulating the development of the beet-sugar industry in the United States were most in vogue from 1895 to 1898. There were some cases of state-bounty granting before this and a few have occurred since, but the main activity took place during the three years following the expiration of the bounty period of the McKinley Law (July 1, 1895).

As a rule the state bounties granted during this period took the form of a rate per pound (usually 1 cent) paid on the sugar product, and commonly providing as a condition of payment that the beet growers be paid at least a stipulated price per ton for the beets (usually $5). On the most common basis — 1 cent for sugar bounty, with $5 per ton to be paid for beets — the extra beet price nearly offset the bounty on sugar, so that the beet growers in fact secured most of the money paid out under the bounty law.

Nebraska was one of the pioneers in the payment of beet-sugar bounties. That state had two experiences with the practice, one before and the other during the time of greatest activity in state-bounty payments. In the year 1889, when the Oxnards established a beet-sugar factory at Grand Island, Nebraska, that enterprise was fostered in a number of ways, including an outright gift of the land on which the factory stood, a cash bonus, and a state bounty of 1 cent per pound on sugar produced. This bounty yielded $7364 for the campaign of 1890; in the following year the bounty was withdrawn. The same group of capital undertook to establish a second factory at Norfolk, Nebraska, in

1892. But the farmers of the district, in view of the election results, which pointed to the repeal of the McKinley bounty, were not very enthusiastic about the enterprise; and this, combined with the dry year of 1894, almost killed the industry in that state.

In March, 1895, the state came to the rescue of the languishing industry, and the legislature passed a new bounty law, offering $\frac{5}{8}$ cent a pound on all sugar manufactured, provided the beets brought the farmers at least $5 a ton. Since the amount of bounty on the finished sugar just about covered the extra cost of the beets, it amounted virtually to a bonus of $1 a ton for the beet growers. Under the stimulus of this law some 9000 acres were put under beets for the two Nebraska factories for the crop of 1895. The legislature of 1896 did not favor the principle and repealed the bounty law. The Grand Island and the Norfolk factories nevertheless paid the farmers the extra price for beets and filed with the state a claim for the bounties, due under the old law. This claim, which amounted to $40,000, was in the courts for a number of years, and it was not until 1904 that the law finally was declared unconstitutional. The two subsidized factories, and two others established later, have all gone out of business, except that at Grand Island.

The state of Michigan had an experience with bounties which in many respects was even more striking than that of Nebraska; though the industry established under the impulse given by the bounty law has survived in Michigan much better than it did in Nebraska, a result due, no doubt, to natural conditions more favorable to the industry in Michigan than in the latter state. The legislature of 1897, in Michigan, passed a law providing for a bounty of 1 cent per pound to be paid for sugar made from beets for which at least $4 per ton had been paid to the farmers. An appropriation of $10,000 was made to cover the payment of the bounty, and it was provided by the law that any excess over this amount should come from the general fund not otherwise appropriated. It was further provided that any factory with a capacity of at least 2000 pounds of sugar per day, erected while this act was in force, should be entitled to receive the bounty for

a period of at least seven years from the date of the enactment of the law, March 26, 1897. The Michigan Sugar Company, with a factory at Bay City, in the campaign of 1898, made over 7,500,000 pounds of sugar and, therefore, claimed $75,000 in bounties from the state. By 1899 there were eight companies in operation, and their combined bounty claims for that year amounted to $301,106.13.

The legislature of 1899, frightened by the large amount of the claims made under this bounty law, amended the act, reducing the bounty to $\frac{1}{2}$ cent per pound; but the legislature refused to fix the limit of the bounty at $25,000 as recommended by the governor, and accordingly the governor vetoed the new law, leaving the old law still in effect. The matter was then brought before the Supreme Court of Michigan in connection with a suit for bounties unpaid, and the court declared the law unconstitutional, since it was "not a proper expense of the state on which a tax could be predicated." A large part of the industry thus artificially stimulated remained in Michigan even after the bounty law was declared unconstitutional, and Michigan to-day ranks as the third largest beet-sugar-producing state in the Union.

The legislature of the state of New York, on May 18, 1897, passed a bounty law, appropriating $25,000 to be given to beet-sugar manufacturers, provided none received more than 1 cent per pound, and provided also that the factories should pay to the farmers not less than $5 per ton for the beets used in manufacturing the sugar on which the bounty was paid. In 1898, $50,000 was appropriated to cover the expense of this bounty. Though the maximum limit of the bounty was subsequently reduced to $\frac{1}{2}$ cent per pound, the policy of paying a direct bounty for sugar production in the state of New York was not entirely abandoned until the year 1907. Of three factories operating in New York under the law at various times, one still survives.

Utah is one of the few states which has paid a sugar bounty without any apparent subsequent regrets or change of heart. In the year 1896, the state voted a one-cent-per-pound bounty to the new factory at Lehi, and it seems to be pretty generally

agreed that this aid, granted for the first two years, was an important factor in the firm establishment of that plant as a successful manufacturing enterprise and a profitable outlet for a new crop.

Kansas first passed a beet-sugar-bounty law in 1887. This law which gave a bounty of 2 cents per pound on beet sugar was amended in 1891, when the rate was cut to $\frac{3}{4}$ cent. The largest sum paid in any one year under these laws was $50,304, in 1891. After 1896 the beet-sugar industry was abandoned in the state. Sugar-beet growing was subsidized directly by a new bounty law passed in 1901. This law differs from nearly all other state-bounty laws in that the bounty of $1 a ton on beets grown was paid directly to the farmers instead of being paid indirectly by the sugar factory. A limit of $5000 was set for this bounty, and it was provided that if the claims for bounty totalled more than this amount, the $5000 should be divided *pro rata* among all growers on the basis of their tonnage. In 1901 the farmers of the state received $1747, and by 1904 the $5000 limit was passed. In that year, 6378 tons were produced, so that the farmers each received almost the full bounty of $1 per ton. In 1905 there were 8605 tons grown by 132 farmers, and in 1906, 69,000 tons were grown by 245 farmers. Of this total, 11,000 tons were grown by the United States Sugar and Land Company and were chiefly manufactured at the company's plant at Garden City, although small quantities were shipped by them to other factories, not under control of the company, at Holly, Colorado, and at Leavitt, near Ames, Nebraska.

The state of Idaho passed a bounty law which was brought into the courts before any money was paid under it, and was finally declared unconstitutional only a short time before the bounty period provided by the law expired automatically in 1904.

The state of Washington, in 1898, passed a law providing for a bounty of 1 cent per pound on raw sugar, with a limit of $50,000. This was to be paid only to factories built before November 1, 1899 (afterwards extended to 1901). It was to be in effect only three years. Only one factory made claims for bounties under this law.

The state of Minnesota, in 1898, passed a bounty law and paid bounties in 1898 and 1899 to a single factory. The payment was refused in 1900, and the law, under contest, was declared unconstitutional.

Iowa and Wisconsin varied the form of bounty somewhat, by not giving a direct money payment, but providing merely for exemption of the beet-sugar factories from taxation, the Wisconsin law running for five years from 1897.

The states of South Dakota, Indiana, Pennsylvania, and Illinois form a group of states in which a bounty law was passed for beet-sugar production, but in which no money was ever paid out, because no one came forward who had complied with the requirements of the statutes. The state of New Jersey had a peculiar experience in that a bounty law was passed by the legislature in 1898, but was vetoed by the governor, on the ground that experiments did not indicate sufficient reason to believe that the establishment of the industry was feasible in the state.

BEET SUGAR

By Frank William Taussig, Ph. D., Litt. D.

(From "Some Aspects of the Tariff Question," chap. vii, p. 80)

[Many footnotes are omitted from this reprint. The reader is referred to the original article. — Ed.]

THE beet-sugar industry presents questions essentially different from those considered in the preceding chapters. The sugar beet is grown in the temperate zone, and its cultivation is one among many possible forms of agriculture. In view of its peculiar position and significance, it deserves careful and detailed consideration.

Chronologically, the beet-sugar supply is among the later additions to the total for the United States. Barring a slight amount from one or two California enterprises, no beet sugar at all was produced in the country before 1890. The bounty given by the tariff act of that year (1890) is often referred to in the literature on the subject, especially that put forth by protectionists, as having had a stimulating effect on the industry. Though this bounty was no more than an equivalent for the duty then remitted, it may have given some impetus, for the same psychological reasons as in the case of the Louisiana planters. Several states also gave bounties for the production of beet sugar, usually moderate in amount and limited in time; these constituting, so far as they went, a substantial bonus. Probably no less effective than the bounties at the start, and more effective as time went on, was the propaganda of the Department of Agriculture. That department preached beet-sugar in season and out of season; spread broadcast pamphlets dilating on the advantages of beet growing for the farmer and giving minute directions on methods of cultivation; maintained a special agent, who kept in touch with the

manufacturers and farmers, and annually reported on the progress of the industry. The result was familiarity with the possibilities throughout the country, the removal of all obstacles from inertia and ignorance, and a rapid development in all regions where there was a promise of profits.

At all events, the beet-sugar product increased rapidly after 1890. It quadrupled between 1890 and 1900, and more than quadrupled between 1900 and 1910 — a remarkable rate of growth. Far from remaining insignificant and quite negligible, its contribution to the country's sugar supply became more and more important. It surpassed that of Louisiana cane sugar, equalled that from Hawaii, and itself was surpassed only by the supply from Cuba. In round numbers, over one billion pounds of beet sugar were produced in each of the four years, 1908–1912. The years 1912–1913 and 1913–1914 still showed a marked increase.

Equally significant and striking was the geographical distribution of the industry. The tabular statement on the next page shows what that distribution was.

One fact is obvious on a cursory inspection of these figures. The beet-sugar industry is in the main massed in the Far West — in California, Utah, Colorado, and the adjacent region. The agricultural belt of the Central States has a very slender share. Only one state in this part of the country, Michigan, makes a considerable contribution to the supply. Wisconsin and Ohio (not separately given in the table) each adds a little. No other state in this region has more than one beet-sugar factory. Barring Michigan, the production of beet sugar may be said to be confined to the Rocky Mountain and Pacific states.

The explanation of this geographical concentration does not lie in any obstacles from climate or soil in other parts of the country. The beet flourishes over a very wide area. An instructive pamphlet issued by the Department of Agriculture shows the zone in which the sugar beet may be expected to "attain its highest perfection." This zone, or belt, two hundred miles wide, starts at the Hudson, and sweeps across the country to the Dakotas; turns southward through Colorado, New Mexico, and

BEET-SUGAR PRODUCT IN THE UNITED STATES[1]

Year	Total	California	Utah	Colorado	Michigan	Wisconsin	Other States
1899–1900 . .	163	85	19	2	33		24
1900–1901 . .	172	57	17	13	55		30
1901–1902 . .	365	140	28	45	105	6	41
1902–1903 . .	438	159	38	78	109	8	46
1903–1904 . .	466	136	46	89	128	11	56
1904–1905 . .	470	93	57	111	104	22	83
1905–1906 . .	635	144	48	209	122	27	85
1906–1907 . .	970	178	82	343	177	36	154
1907–1908 . .	852	180	93	245	171	37	126
1908–1909 . .	1025	255	98	299	212	34	127
1909–1910 . .	1120	280	77	206	278	36	243
1910–1911 . .	1019	291	76	206	260	38	148
1911–1912 . .	1199	323	115	250	251	57	203
1912–1913 . .	1385	318	119	432	190	46	139
1913–1914 . .	1467	342	114	448	244	25	140

Arizona; and then, turning again, proceeds west and northwest through California, Utah, Idaho, and the Columbia valley. It includes a great part of the north-central region. Yet in the last mentioned, the most important and productive agricultural region of the country, there is virtually no beet growing or sugar making, except, as just mentioned, in Michigan. The climatic and agricultural possibilities are not turned to account until the Far West is reached.

The reason for the absence of beet growing and hence of sugar-beet production in the north-central region is to be found in the principle of comparative advantage — agriculture is applied with greater effectiveness in other directions. It is not that the climate or soil or even the men make it more difficult to grow beets here than in Europe. It is simply that other ways of using the land are found more advantageous.

An excellent investigator in the agricultural aspects of the beet-sugar industry has said: "The growing of beets is not agriculture, but horticulture." All the manuals and pamphlets insist on the need of elaborate preparation, minute care, much

[1] In million pounds.

labor directly in the fields. The planting of the seed does indeed take place by drills, the plants coming up in continuous rows. But after this first operation, painstaking manual labor is called for. When the young shoots come up, they need first to be blocked, then thinned. "Blocking" means that most of the beets in the rows are cut out by a hoe, only small bunches being left, about ten inches apart. These bunches are then "thinned"; every plant is pulled out by hand except one, the largest and healthiest. "Great care should be exercised in this work, and by careful selection all the inferior plants should be removed. . . . When thinning, it is a good plan to give the ground a thorough hand hoeing." Throughout the growing period the beets must be cultivated, partly with a horse cultivator, partly with the hand hoe. "The cultivator and the hoe should be used alternately until the beets are too large for horse cultivation without injuring them. Hand laborers should continue to go over the beet field, pulling weeds and grass that may have persisted."

Essentially the same situation appears when harvesting is reached. The beets may be first loosened by a plow and by a lifter; but each individual beet must be pulled out by hand. Then they are knocked together gently to remove the adhering dirt. Finally, they are "topped"; that is, the neck and leaves are cut off with a large knife. "The removal of the tops of the beets is a tedious process, which in Europe is performed by women and children. . . . Constant supervision is necessary in this work."

No machinery has been devised that serves to dispense with the large amount of hand labor called for. "Several attempts have been made to construct a mechanical device by which the beets can be topped, thus saving a large expense, and perhaps a successful device of this kind may some day be invented. So far as is known at the present time (1908), however, this process has not been successfully accomplished by machinery, and the topping must still be done by hand." "Inventive ingenuity in Europe and especially in America," said the Special Agent of the Department of Agriculture in 1906, "has been directed to planning a harvester which will do away, as far as possible, with

this expensive hand work. . . . It cannot be said that any of these newly devised implements works successfully in all soils." In 1912 the Department's report again had to confess that "a really successful beet topping and harvesting machine" was yet to be devised, and that "at present all the operations of pulling, topping and loading are done by hand."

It follows that the successful growing of the sugar beet calls for a large amount of monotonous unskilled labor. No small part of it is labor that can be done by women and children and tempts to their utilization. Not only does the typical American farm and farm community lack the number of laborers required; the labor itself is of a kind distasteful to the farmers. "Thinning and weeding by hand while on one's knees is not a work or posture agreeable to the average American farmer. Bending over the rows and crawling along them on one's hands and knees all day long are things that the contracting farmer is sure to object to as drudgery. . . . Our farmers ride on their stirring plows, cultivators, and many implements." As was remarked by a witness at a tariff hearing, "The thinning and the topping of the beets it is pretty hard to get our American fellows to do, and they prefer to hire the labor and pay for it."

Anticipating for a moment what will be said in the following paragraphs of the beet-sugar industry of the Mountain and Pacific regions, it may be pointed out how this need of extra labor has been met. The labor situation is instructive not only as regards the beet-sugar industry itself but also as regards the general trend in the United States during the last generation.

Almost everywhere in the beet-sugar districts we find laborers who are employed or contracted for in gangs — an inferior class which is utilized, perhaps exploited, by a superior. The agricultural laborers in the beet fields are usually a very different set from the farmers. On the Pacific coast they are Chinese or Japanese. Except in Southern California, where the Mexicans are near at hand, most of the work is done by Japanese, under contract; there being usually a head contractor, a sort of "sweater," who undertakes to furnish the men. In very recent years Hindus (brought down from British Columbia) also have appeared in

the beet fields of California. In Colorado "immigrants from Old Mexico compete with New Mexicans (i.e., born in New Mexico), Russians, and Japanese." Indians from the reservations have been employed in Colorado. At one time, convict labor was used in Nebraska. In some parts of Colorado, in Montana, and at the beet fields of the single factory in Kansas, refugees from German colonies established long ago in Russia are employed. In Michigan, the main labor supply comes from the Polish and Bohemian population of Cleveland, Buffalo, Pittsburgh. The circulars issued by the Department of Agriculture and by the state boards and bureaus repeatedly call the attention of the beet farmers to the possibility of employing cheap immigrants. The troublesome labor problems, it is said, need not cause worry: here is a large supply of just the persons wanted. "Living in cities there is a class of foreigners — Germans, French, Russians, Hollanders, Austrians, Bohemians — who have had more or less experience in beet growing in their native countries. . . . Every spring sees large colonies of this class of workmen moving out from our cities into the beet fields."

The sugar manufacturers, who buy the beets and make the sugar in their factories, play a large part in bringing this labor to the fields. Indeed, they play a large part in every phase of the industry — on its agricultural side as well as on its manufacturing side. They supply seed; give the farmers elaborate directions on methods of cultivation; employ supervisors to visit and inspect the farms and to spur the farmers to the needed minute care; of necessity they test the beets at the factory and pay according to sugar content; and they often undertake to provide the labor. Sometimes the factories contract to attend to the field labor themselves, receiving from the farmers a specified price — so much for bunching and thinning, so much for each hoeing, so much for topping. The farmers then have nothing to do but supply "reasonable" living accommodations. More often farmers not thus provided for secure their laborers through contractors, at a fixed price of so much (varying from $15 to $20) per acre for all the work; these middlemen being hunted up or selected for the farmers by the factory managers. Such

sweaters make a profit from their sub-contract with the field hands; the system being open to the possibilities of overreaching, which are too familiar under such arrangements.

All this is part of the transformation which has been wrought in so many parts of our social and economic structure during the last quarter of a century by the great inflow of immigrants. Agriculture as well as manufacturing industry is feeling the influence of the new conditions. Laborers from the congested foreign districts of the cities — Italians, Bohemians, "Huns," "Polacks," Russians — make their way to the market gardens surrounding the cities, to vegetable districts such as that of the Chesapeake peninsula, to the cranberry fields of New Jersey; these do the hard work for the shrewd Yankee farmers. Some of them may be on the way to the acquisition of land through their savings. But certainly for the time being the conditions are socially and industrially unwelcome. They are not dissimilar to those of the Sachsengangerei, of ill repute in eastern Germany. They are very different from the conditions which we think of as typical of agriculture in the United States. As in these analogous cases, so in the beet fields, there is an agricultural proletariat.

As yet, however, the main agricultural region of the United States — the great central region in which are the wheat and corn belts — has been little affected. Here we still find extensive cultivation, agricultural machinery, the one-family farm. It is true that during the harvest season there is a heavy demand for agricultural laborers, and that this is satisfied by laborers who may be said also to constitute an agricultural proletariat. It is true, further, that the stage of pioneer farming has been passed or is rapidly being passed, that rotation is becoming more systematic and skilful, the land more valuable, cultivation more intensive. Nevertheless, this remains the region of the one-family farm. The farmers "ride on their stirring plows and cultivators" and in this way are able to do most of the work on their lands for themselves.

Throughout the corn belt, more particularly, there is no sugar-beet industry of any moment. It pays better to raise corn; there

is a clear comparative advantage in corn growing. This grain is peculiarly adapted to extensive agriculture. It also lends itself readily to the use of machinery; corn can be "cultivated" between the rows by horse power. It is a substitute for root crops, and can be rotated steadily with small-grain crops. It is a direct competitor with the sugar beet for cattle fattening. The advocates of beet raising always lay stress on the value of the beet pulp, the residue at the factory after the juice has been extracted, for cattle feeding. But corn is at least equally valuable for the purpose, and the typical American farmer raises it by agricultural methods which he finds both profitable and congenial. One man can grow forty acres of corn. He can plant only twenty acres of beets; and these he cannot possibly thin and top. In Iowa "the farmers are progressive, successful, and satisfied. In fact, this has been the main obstacle to installing the sugar industry there. The farmers have not shown a disposition to grow the beets. When the farmers are advised that beet culture is accompanied with considerable hard work, factory propositions usually succumb to the inevitable. The farming class of the state is accustomed to the use of labor-saving implements in the fields."

It is not an accident that the states of the Great Lakes region in which the sugar-beet industry has shown some development — Michigan and, in much less degree, Ohio and Wisconsin — are outside the corn belt. Except along the southern edge of these states, the grain does not ordinarily mature. Yet even here corn remains a formidable competitor of the sugar beet, in its use through ensilage. It is cut green, stored in the silos, and so is available for cattle feeding. It continues to be available in rotation with other grain and with grass. During the last two decades Wisconsin has become a great dairy state. "The pasture, hay, and corn lands of the state form the basis of the livestock industry." Here there is a profitable system of agriculture in which there is no need of the minute attention, the elaborate cultivation, the wearisome labor, which are required for the sugar beet. As compared with the Far West, Michigan and Wisconsin, as will presently appear, lack some climatic advantages. A tariff subsidy may make it worth while for their farmers to grow the

beets; but without the subsidy this use of the land cannot compete with others more advantageous.

When the tariff legislation of 1913 was under consideration the beet-sugar makers of Michigan pleaded strenuously for the maintenance of protection on the ground of consideration for vested interests. It must be admitted that the plea was in one regard of exceptional force. Not only had the general policy of protection been long maintained by Congress and investment in accord with it encouraged, but, as one of the witnesses before the Ways and Means Committee said in 1909, "The investment which our company made in the sugar business was made on the invitation and urgent advice of the United States government through its Department of Agriculture." It was a serious responsibility which the department thus took on itself. Its zeal too often was indiscriminate. Its propaganda rested, in part at least, on a crudely mercantilist principle — on the assumption that it is desirable to produce within our own borders anything and everything that can possibly be produced there, and that a tariff policy based on this assumption will be maintained indefinitely.

Turn now to the Far West, where most of the beet sugar is made. Two conditions are favorable to beet growing in this western region: the climate and the special advantages of irrigation.

The variety of the beet suitable for sugar making flourishes in a cool climate, but it needs plenty of sun. "Abundance of sunshine is essential to the highest development of sugar in the beet. Other things being equal, it may be said that the richness of the beet will be proportional to the amount — not intensity — of the sunshine." Evidently the cool region of cloudless sky in the arid West meets this condition perfectly.

Again: "In respect to moisture, the sugar beet is peculiar in some respects. . . . There are three periods in the life history of the sugar beet which demand entirely different treatment so far as moisture is concerned: (1) the germinating or plantlet period; (2) the growing period; (3) the sugar-storing period." During the first, "the beet needs sufficient moisture and warmth to germinate and start it, but never an excess." During the

second, "the beet needs little if any moisture." During the third, or sugar-storing period, "the plant should be given no water. The conditions desirable at this period are plenty of light and dry cool weather. If the beet is given moisture to any considerable extent, it will be at the expense of both sugar and purity."

The irrigated regions of Colorado, Utah, Idaho, Montana, supply just the right combination of climate and moisture — cool temperature, abundant sunshine, moisture as needed, absence of moisture when harmful. Hence Colorado and Utah are described as the ideal beet-sugar states. "Considering everything, Utah is the ideal beet-sugar state. . . . Its natural conditions are quite similar to those of Colorado." In Colorado 12 to 25 tons of beets to the acre are readily secured; even in the early days 15 to $17\frac{1}{2}$ tons were got on the average; whereas in European countries not only is the tonnage per acre less, but the sugar content smaller. California, where the industry first was undertaken on any considerable scale, and where it has grown steadily, has some special advantages. A good part of its beet district has just the required combination of climate and precipitation.[1]

Contrast such exceptionally favorable climatic conditions with those of the Great Lakes region. The successive reports of the Department of Agriculture dwell on the uncertainty of the beet-sugar crop in this zone because of the irregularity of rain and sunshine. The Michigan farmer, unlike the grower in the irrigated region, cannot count with certainty on abundant sunshine

[1] "The exceptional soil and climatological conditions in California seem peculiarly adapted to the production of beets with a high sugar content. While their reported yield per acre is not so great as that of some other states, the sugar content is decidedly in excess of any other, so that with an acreage considerably less than that of Michigan the total yield of sugar is much more. The calculated yield per acre for the past season was very nearly 3310 pounds. Many of the California soils are very retentive of moisture, so that with an annual rainfall far below that of the central and eastern part of the country beets can be grown successfully without irrigation. The little rain which they have is usually so nicely distributed through the early and middle seasons of growth as to leave almost ideal conditions for the period of ripening, with its accompanying storage of sugar in the cells. This ripening process is also materially assisted by the alternation of cool nights and warm days, a condition which seems best suited to the formation and storage of sugar in this plant." — Report on Beet-Sugar Industry in 1910 and 1911, p. 19

and cannot apply moisture exactly when needed — difficulties which threaten not only the quantity of the crop but also its saccharine content.

The same climatic difficulties are encountered in the European countries where sugar beets are grown. There also the beet harvest and the sugar output are greatly affected by the weather during the growing and harvesting season. The north central states of our own country are not in this respect at a disadvantage. But they possess no climatic superiority for beet growing; whereas they do possess agricultural and industrial superiority for other crops. Beet growing, in other words, suffers from a comparative disadvantage. The Far Western region, on the other hand, does have unusual natural advantages for the sugar beet. Whether these natural advantages are so great as to enable the industry to hold its own, in free competition with cane sugar and with beet sugar made in the European regions of permanently cheap labor supply, is another question. But they explain why, under the stimulus of protection, the industry grew fast in that region, and in widely distributed parts of it; while yet under the same stimulus it made little progress in the typical agricultural states.

It is constantly said, with reference both to the Mountain states and to those of the central region, that the culture of the sugar beet brings special agricultural benefits. The high cultivation, it is said, improves the quality of the land; general fertility is enhanced; a better rotation is established; the by-products, especially the beet cake, are valuable for cattle feeding, and this in turn provides manure and maintains fertility; the factory makes a market for local coal and lime; it "stimulates banking and almost all kinds of mercantile business." These advantages have been dwelt on almost *ad nauseam* in the publications of the Department of Agriculture. So far as the tariff question is concerned, they prove altogether too much. If beet culture is so very advantageous for the farmer, why does he need a bonus or protective tariff to be induced to engage in it? The American farmer is not an ignorant or stolid person; he has access to a multitude of educational and propagandist agencies,

and is even beset by them; he is a shrewd observer, a ready innovator. With the transition from pioneer farming, the agricultural methods of the central region have been revolutionized during the past generation. If beet culture were really so advantageous a part of the general change, we might expect its speedy and wide-spread adoption. The advocates of beet growing have simply accepted the common and fallacious notion that the highest cultivation is necessarily the most advantageous cultivation. The agricultural expert is apt to be intent on the gross product, on the largest yield per acre. But the best agriculture is that which secures the largest yield not per unit of area but per unit of labor. Minute cultivation means a large product per acre but by no means necessarily a large product per man.

The only solid ground for maintaining that protection for beet sugar has been of advantage to agriculture is that of the young-industries argument. Ignorance, settled habits and prejudices, unaccustomed methods, the inevitable failures in first trials, all these obstacles may have stood in the way of the beet-sugar industry in its first stages. It is true that the argument for protection to young industries was not supposed to apply to agriculture by List and his followers, since unalterable conditions of soil and climate were thought to determine once for all the geographical distribution of the extractive industries. It would, perhaps, be hazardous to lay down an unqualified proposition of this sort. The course of industry may conceivably be guided and diverted to advantage in agriculture as well as in manufactures. The difference between the two cases would seem to be simply one of probability, of degree. None the less, an important difference in degree remains. It is more likely that industry will pursue its "natural" course in agriculture than in manufactures; since agriculture is affected much more by the physical factors of soil and climate and much less by acquired skill.

There are still other grounds for questioning the applicability to agriculture of the young industries-argument. There is not in agriculture that close contact between different producers or that stress of competition between them which is most likely to lead to improvements; and a stimulus to improvement is the

essence of the argument. In the contemporary German controversy, considerations of this sort have been advanced in support of the duties on grain; but there is quite as much weight in the counter argument that agricultural improvement is most effectively spurred by adversity. It comes not from high prices and easy gains, but low prices and the need of facing a difficult situation. The low prices of sugar which prevailed for a considerable period (especially in the decade 1890–1900) proved a blessing in disguise to the Louisiana sugar planters; their methods of cultivation and sugar extraction were improved in the effort to meet conditions of depression. The same seems to have been the case with the Hawaiian planters during the period (1890–1894) of free sugar. It has already been pointed out how difficult it is to say whether protection tends on the whole to promote technical improvement or to retard it. A general proposition one way or the other would be as hard to prove conclusively with reference to agriculture as with reference to manufactures. But it seems clear that acquired skill and established advantages count for more in manufactures than in agriculture; and that tariff protection is therefore an even less promising device for promoting better use of the soil. Education, experiment stations, diffusion of the right sort of information, are much more promising. But education and the spread of information, to be really effective, must be adapted to the economic conditions. In this regard our Department of Agriculture for many years showed no discrimination. Under the Republican régime of 1897–1913 its publications were pervaded by a crude mercantilism. Its propaganda for beet sugar rested not on the young-industry and eventual-independence principle, but on the crude protectionist doctrine that any and every increase of domestic supply was necessarily to the country's advantage.

Questions in some respects different arise concerning the beet-sugar factory, which buys the beets from the farmers and makes the sugar. Here there is what the business world calls "a straight manufacturing proposition." Whether the manufacturing of sugar can be done to advantage in the United States depends on the same conditions as in other manufactures. It is much affected

by the opportunities for using machinery and for the exercise of American inventive and engineering capacity in improving machinery. Such evidence as I can get indicates that so far as this branch of the industry is concerned, the conditions are not unfavorable to its sustained prosecution with little need, if any, of tariff support. When the first factories were built in California the machinery was imported from Germany. "The Yankee inventive genius of machinery men at once took hold of the matter, making so valuable improvements that both the above-mentioned factories (at Watsonville and at Chino) were shortly refitted with machines of American make, and every factory in this country in the last few years has purchased American machines." So in the Department of Agriculture's pamphlet on the industry, it is stated that "in the early days of the beet-sugar industry in this country, Europe was called on to furnish all machinery. Now very little is imported, and in fact some of the foreign factories are using American-made machinery." The breaking loose from European tutelage and the introduction of technical improvements are significant indications of the successful adaptation of a new industry to American conditions and of the ability to meet foreign competition unaided. It should be borne in mind, moreover, that the factory managers take an active part in directing and supervising the agricultural operations. In this regard there seems to be abundant and successful enterprise. The managers of the beet-sugar factories have been chiefly instrumental in bringing the indispensable labor supply to the farms. Through traction engines and the like they have grappled with the difficulties of transporting the beets from the field to the factory. They have selected the seeds and have assiduously spread information among the farmers on the best ways of getting a large tonnage of beets and a large content of sugar. In the Far West especially, all this activity has been carried on with industrial and pecuniary success. Neither in the factory itself nor in the problems of organization arising from the interdependence of farm and factory has there been a lack of skill or energy.

It is probably another sign of successful adaptation to new conditions that the American beet-sugar factory carries its operations

a stage further than do the factories of Europe. The latter usually produce raw sugar only, which is sent to refineries for the last stage of preparation; precisely as our cane sugar is imported in the "raw" form, and goes through the refineries before being marketed for consumption. The American beet-sugar factories, on the other hand, make refined (granulated) sugar, which is sold at once to the grocers. In Europe the greater geographical concentration of beet growing and sugar making, and the consequent ease of transportation to refineries near by, probably account for the practice there prevailing. The different American practice doubtless took its start because refining was controlled, during the earlier years of beet sugar, by the Sugar Trust and its affiliated concerns; but it persisted because it fitted the geographical and industrial conditions of the industry. Another reason is that in continental Europe beet farming and sugar making constitute commonly one integrated enterprise, and are associated either with estate farming on a large scale or with direct coöperation between large-scale agriculturists and the factory owners. A different sort of coöperation between farm and factory was necessary under our conditions of land ownership, and this has been worked out successfully by the American manufacturers. Neither in the technical aspects of the manufacturing industry nor in its appropriate organization is there indication of disadvantage in the United States.

This brings us to the close of our examination of the sources of sugar supply and their relation to the tariff. Let us now, by way of summary, proceed to a quantitative estimate of the consequences of the duty on raw sugar, postponing for the moment the consideration of the effect (comparatively slight, as will shortly be shown) of the additional duty on refined sugar.

The burden of the sugar duty can be measured with greater exactness than is often possible. We know that the price of sugar was raised by the duty throughout the area of consumption. In this case, we have no reason to question the significance of continued imports. The only serious qualification which needs to be made is that which arises for the later years from the uneven

and irregular effect of the partial remission on Cuban sugar. Except for this, we could say with confidence that from 1897 to 1913 the price of sugar was raised, the country over, by the full amount of the duty — one and two-thirds cents a pound. Allowing for the modifying influence of the Cuban remission, we may make our calculations on the assumption that the effect of the duty during the years immediately preceding 1913 was to raise the price of all sugar by one and one-half cents. The figure may not be accurate to the last dot; but the economist is fortunate when he can measure his results with so close an approach to exactness as this.

Of the tax paid by consumers in the form of enhanced price, a little less than one-half went to the government treasury; the rest — more than half — was handed over to the various favored sugar producers. Let us imagine the United States government to present an account, rendering to its wards, the sugar consumers, a statement of what had become of the sums collected from them. The government would properly enter on the debit side the total which it had taken from the consumers, on the credit side an enumeration of the various ways in which it had distributed the total. The fiscal year 1909–1910 may be taken as representative. For that year the account would stand thus:

UNITED STATES GOVERNMENT IN ACCOUNT WITH SUGAR CONSUMERS, FOR THE FISCAL YEAR 1909–1910

Dr.	Cr.	Paid over to	
		U. S. Treasury	Sugar products
		Millions of dollars	*Millions of dollars*
Taxes collected on 7400 mill. lb. of sugar at 1½¢	On 300 mill. lb. of full-duty sugar	$5.3	
	On 3500 mill. lb. of Cuban sugar	45.6	
	On 1100 mill. lb. of Hawaiian sugar		$5.2
	On 570 mill. lb. of Porto Rico sugar		16.6
	On 175 mill. lb. of Philippine sugar		8.5
	On 750 mill. lb. of domestic cane sugar		2.6
	On 1025 mill. lb. of domestic beet sugar		11.2
			15.4
		$50.9	$59.5
$111.0		$110.4	

It appears that in 1909–1910 the government collected 111 millions of dollars from the sugar consumers. It put about 50 millions into its own treasury, using that sum for meeting public expenses; and handed over about 60 millions to the various sugar producers. The proportion going to the sugar producers tended to grow greater during the whole of our period — from the close of the Civil War until 1913. During the early years of the period, the sugar duty had been mainly a revenue tax. By its close, the characteristic features of a protective duty had become dominant; the treasury received less in revenue than the favored producers secured in largess or bounty.

The sum paid over to the sugar producers would be described by some free traders as a net bonus, or tribute, to the protected persons; robbing Peter to pay Paul. By other free traders it would be described as so much net loss to the country; not a source of extra gains to Paul, but merely an inducement for engaging in an industry in which the producer made no improper gains, while the consumer paid more than a proper price. The truth would seem to be midway. Since the production of raw sugar has the characteristics of an extractive or raw-product industry, different producers were in different circumstances. Some were just able to hold their own even with the higher price caused by the duty; they were at the margin, and made no unusual profits. Such would seem to have been the case with many of the Louisiana planters, perhaps most of them; with many beet-sugar growers; with some planters in Hawaii and Porto Rico. Others were in the fortunate position of producing cheaply and yet selling at the duty-raised price; they secured unusual gains, a producer's surplus or economic rent. Such was probably the case with the majority of the Hawaiian planters, with some beet-sugar growers, doubtless with other sugar producers also. As regards this second class, the sugar duty brought not a net loss to the community, but a transfer from some to others; Peter really was robbed to pay Paul. How the total charge was divided between the two, it would seem quite impossible to say.

AGRICULTURAL CREDIT IN THE UNITED STATES

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[Footnotes omitted from this reprint. The reader is referred to the original article. — Ed.]

THE purpose of this article is to inquire into conditions of agricultural indebtedness in the United States, to indicate the credit facilities of the American farmer and to consider the plans suggested for their improvement.

I. EXISTING CONDITIONS

The farmer may need credit for:

1. Land acquisition, through purchase or inheritance.
2. Permanent improvements, such as buildings, fences, drains.
3. Equipment, including machinery, implements, work animals.
4. Working capital, including expenditures for fertilizer, seed, fodder, fuel, labor.

Credit for land and improvements is usually termed ownership credit; and since it is granted for a comparatively long time on mortgage security, it is referred to as mortgage or long-term credit. Working credit, on the other hand, since it is granted for a comparatively short time, and since the personal factor is the chief element in its security, is referred to as personal or short-term credit. Equipment credit, though more like improvement than like working credit when viewed from the standpoint of production, must be classed, on account of its comparatively short term and the importance of the personal element in its security, as short-term or personal credit.

It may be broadly stated that previous to the last quarter of the nineteenth century American farmers felt little need of credit. They had been given their land by the Government or had bought it at comparatively low prices. Since agriculture was extensive, expenditures for improvement and equipment were inconsiderable. The virgin soil needed no fertilization, and credit was seldom required except for family supplies during the crop-growing period.

The western movement, which began to assume large proportions about the middle of the nineteenth century, resulted in the opening of vast areas of fertile land adapted to grain growing and of free grazing land on which live stock could be raised at low cost. This resulted in a tremendous surplus of agricultural products, which, owing to the development of railroad and ocean transportation, was thrown on the markets of the world, bringing prosperity to the farmers of America and ruin to those of Europe.

Partly as a result of this overwhelming flood of production and partly on account of the speculation and inflation which followed the Civil War, a great increase in land values took place. This gave farmers a broader basis for borrowing, and they took advantage of it to make improvements and to add more land to their farms. Tempted by the high rates of interest and deceived by the reported endless wealth of the new West, eastern and European capitalists made loans altogether too freely and often on the security of land practically worthless or located in regions of uncertain crops. The upward movement culminated in the early nineties; grain farming reached its climax, and overproduction brought the inevitable fall of prices and of land values.

Prices of farm products reached their lowest point about 1896, but land values continued to fall until 1900. The low prices discouraged production, and the increase in cereal production between 1890 and 1900 was only 26 per cent, whereas there had been an increase of 30.4 per cent during the preceding decade. In many of the great agricultural states soil fertility had begun to decline and the increase in production which did take place was due not so much to more intensive or better farming as to the taking up of new lands west of the Missouri.

Mortgage Indebtedness

Farmers now began to feel the burden of their great mortgage indebtedness, which had grown enormously during the preceding decade and which had been incurred largely for unproductive purposes. Many could not pay their interest, and as it often happened that the selling price was less than the amount of the mortgage, foreclosures were common. This collapse caused widespread discontent among the farmers, and as a consequence many investigations into conditions of rural indebtedness were instituted.

The first attempt to secure information regarding the amount of mortgage indebtedness for the entire United States was made by the census of 1890. Two independent inquiries were made at this time. In one case experts were sent to secure the information from the records of certain typical counties, and on the basis of these data the real-estate mortgage indebtedness both urban and rural was estimated for the entire country. In the second case an inquiry was included in the population schedule concerning the mortgage indebtedness of owned farm homes. The data obtained in this latter inquiry is made use of in this study.

While the census of 1900 secured data for the number of farm homes mortgaged, no inquiry was made as to the amount of indebtedness. The census of 1910 secured, on the regular agricultural schedule, information regarding the mortgage indebtedness on farms operated by their owners, but the data was published only for owners renting no additional land. Moreover, complete reports were secured for only 75 per cent of such farms, the mortgage indebtedness of which is reported to be $1,726,172,851. The reported indebtedness in 1890 on mortgaged farm homes was $1,085,995,960. This amount is not comparable to that reported for 1910, since the 1890 statistics include data for owners renting additional land and estimates for the defective reports. In order to make these figures comparable, estimates have been made for 1910 for those owners renting additional acres and for those not reporting. On the assumption that conditions of mortgage indebtedness for such owners are the same as those for which data was published, the total amount of

mortgage indebtedness for all owners in 1910, that is, for all owned farm homes, is estimated to be $2,293,000,000.

On the assumption that the average mortgage indebtedness on farms operated by tenants is slightly below that for those operated by owners, the mortgage indebtedness on such farms is estimated to be $500,000,000, making a total mortgage indebtedness on all farms of $2,793,000,000. In the discussion which follows, the mortgage indebtedness on tenant farms is not included. On the basis of the estimated debt of $1,085,995,960, as reported by the census of 1890 on owned farm homes, and the estimated indebtedness for similar homes in 1910, amounting to $1,726,172,851, the increase in the mortgage debt for the twenty years from 1890 to 1910 is 111.1 per cent.

The question naturally arises, For what purpose was this huge additional debt incurred? The census did not inquire into the subject, but George K. Holmes estimates that about 64.4 per cent of the total debt in 1890 grew out of ownership, either through purchase or through inheritance; and he thinks that probably this statement is equally applicable to the year 1910. When land values increase, ownership becomes more difficult, and the increase of mortgage indebtedness is inevitable. During the period 1890–1910 the value of land and its improvements for the country as a whole increased 100 per cent, and this, coupled with frequency of land transfers, resulted in a great increase of mortgage indebtedness.

The farmer has also made heavy expenditures to raise his standard of living and has spent large sums on improvements and equipment and in working capital. The value of buildings, apart from that of the land, was not given by the census of 1890, but was given in 1900 and 1910, and comparison shows an increase of 77.8 per cent. During the same decade value of implements and machinery increased 68.7 per cent, while the expenditure for labor increased 82.3 per cent, and that for fertilizer, 115 per cent. These increased expenditures for equipment and operation are the result of the normal development of agriculture, since they arise out of a growing necessity for greater intensity of cultivation. Animals are of better quality

and require better housing. More thorough cultivation calls for a larger expenditure for labor or increased employment of machinery. Declining soil fertility may force the farmer to resort to artificial fertilizer. It is possible that these added items of expense may not be reflected in increased production and must, therefore, be wholly met out of an increase in prices. But should such an increase in prices not take place, the additional expenditures would have to be met out of the farmer's capital, which must ultimately increase his mortgage indebtedness. That this is frequently the case the history of agriculture affords abundant evidence. A recent writer, speaking of conditions in a certain locality, says the demand for mortgage credit exceeds the supply, owing to the transformation of short-term into long-term loans. Trosien remarks that personal debts tend to become mortgage debts, while second mortgages often arise from the capitalization of unpaid interest on the first. Consolidation of past debts is given as the greatest cause of mortgage indebtedness in Saskatchewan. In the United States, undoubtedly, no inconsiderable part of the indebtedness incurred through these expenditures has been converted into mortgages; and this, therefore, may be considered as one of the causes of the increase of mortgage indebtedness. But the fact should not be lost sight of that during the period under consideration there has been an enormous rise of prices, which has not been taken advantage of to reduce mortgage indebtedness or prevent its increase or to stimulate production. After due allowance has been made for the growing difficulties in the way of declining soil fertility and the like, the fact remains that there has been an enormous expenditure which should be reflected in increased production; but no such reflection can be discovered. Enormous sums have been spent for buildings, implements, machinery, labor and fertilizers, and yet there has been no appreciable increase in the average yield of staple crops; and though the census is probably mistaken in reporting so slight an increase in the volume of dairy products, owing undoubtedly to overestimation in 1900, if due allowance is made for this fact it is probably true that the increase in dairy products is not commensurate with the increase in population and farm expenditures.

The farmers of the South depend much more on personal credit than do those of the North. Forty-three per cent of the farms in the North Central states are mortgaged, while in the South but 23.1 per cent are mortgaged. In Iowa 51.8 per cent are mortgaged; and in Alabama 26.1 per cent. The reasons for this difference are various. Among them may be mentioned the fact that much of the land in the South is held in large tracts, which are usually broken up into small farms under tenant cultivation. And while the owners of such tracts may often secure money at favorable rates, this system of farming does not adapt itself to large mortgage loaning. In the case of the southern owner who himself tills the farm, the system of agriculture is such that the security offered is not attractive to outside capital. Agricultural practices are not standardized; loans are small; the general prejudice of the owner against a mortgage, the prevailing sentiment that a mortgage on the farm greatly impairs the mortgagor's personal credit, large homestead exemptions and lack of adequate laws to protect the investor have retarded mortgage loans in the South, while low land values and infrequent transfers have also been important factors in keeping down mortgage indebtedness. As a result permanent improvements, which must be made largely from mortgage loans, have not been made. But a tremendous change in this regard has been going on in the South during the past twenty years, and particularly during the last decade. While homestead exemptions and laws protecting credit have undergone little change, ownership has greatly increased among both white and colored farmers. Agricultural conditions have become more stable; land values have risen and are much less speculative than in the North; improvement expenditures show a marked increase, and while the percentage of farms mortgaged and the absolute indebtedness are low in the South as compared with the North, the per cent of increase in mortgage indebtedness in the former section has been very much greater. For example, the increase of mortgage indebtedness for the North Central states was 109.5 per cent, while the increase for the South Central was 484.9 per cent. For Iowa, which has the heaviest mortgage indebtedness of all the northern states, the increase was

165 per cent, while for Alabama it was 621.4 per cent. Although the rates on mortgage loans are much higher in the South than in the better developed agricultural regions of the North, the burden of mortgage indebtedness is much lighter in the South. In much of the South agricultural conditions to-day are very similar, as regards the return on investment, to those which prevailed in the great Middle West a generation ago. High interest rates are offset by large profits; the short term of the loan, which is from three to five years, is usually sufficient time for the farmer to pay off his debt if he is so inclined.

Beyond the expenditure necessary to maintain the former level of production, which may eventually mean an increase in mortgage indebtedness, any further increase in such indebtedness should indicate expansion; that is, an increase in production. In Germany, for example, while mortgage indebtedness has greatly increased during the last quarter of the century, there has also been an enormous expansion in agriculture. Helfferich shows that the yield of wheat, rye, oats, barley, potatoes and hay increased 77.7 per cent during this period, while the acreage increased 87.7 per cent. Similar figures might be given for Denmark. In the United States, however, the increased mortgage indebtedness is not reflected in increased production. Agricultural prosperity has been almost solely due to an increase in prices.

Some writers maintain that this is not a serious matter, since, owing to the rise of land values, the farmer now has, on an average, despite his heavier mortgage indebtedness, a greater equity than before, shown by the fact that in 1890 the mortgage debt on farms operated by owners was 35.5 per cent of their value, while in 1910 it was but 26.1 per cent. But the argument seems to the writer fallacious. The real measure of the prosperity of the farmers as a class is not the amount of their equity but the net return on their investment. Although an increased equity, not accompanied by a corresponding increase in the net return on investment, is of course a gain to the farmer who wishes to sell, it is of no material advantage to the one who wishes to hold his farm and whose income is sufficient for his needs; while a new owner, whether by purchase or by inheritance, is actually

worse off, despite his increased equity, than if the land had not increased in value, because of his larger interest payments and the fact that the mere acquisition of the land has depleted his working funds. To quote from the report of a recent investigation, "where land values are high, the amount of money invested in working capital becomes proportionately small." This refers to conditions in Indiana, Illinois and Iowa. And Trosien states that the higher the price of land rises, the more difficult does it become to secure capital for its proper working.

The significance of equity becomes clearer if farming is viewed as a business which is successful only if it yields a fair return on the investment and pays the farmer fair wages of management. That this is not the case in our most advanced agricultural regions has been clearly brought out by the report of the above-mentioned investigation of farming conditions in Indiana, Illinois and Iowa. Two hundred and forty-seven rented farms were investigated, with the result that the average return on their investment to the landlords in these states is shown to be 3.5 per cent, 3.6 per cent and 3.2 per cent respectively. In the case of 273 farm owners who tilled their farms, the average labor income left after the deduction of 5 per cent interest on the capital was $408. "One owner out of every three paid for the privilege of working his farm, that is, after deducting 5 per cent interest on his investment he failed to make a plus labor income." And the farm owners, with an average investment of over twelve times that of the farm tenants, made less than half as much labor income. The bulletin concludes that the farmers of these regions who are owners are living on the earnings of their investment and not on the real profits of the farm.

It is not at all certain that this increased equity is stable. It is evident that part of the increase has resulted from land speculation; and since production has remained about stationary, the rest must be credited to the rise in prices of farm products. These prices are now so high that any further rise must either curtail consumption or stimulate importation, and is therefore improbable. Indeed it is doubtful whether the present high prices will continue even if there is no interruption of general

prosperity. For in normal times a change of agricultural prices is always imminent, and with prices at their present high level any change would probably be a decline. This might easily cause a diminution of the farmer's income which would result in a fall of land values sufficient to wipe out much of the increase in his equity and to add still further to the burden of his mortgage debt.

The writer is not of the opinion that the average mortgage indebtedness of the American farmer is excessive. In a country so rich agriculturally, a mortgage debt of $2,793,000,000 is no cause for alarm; and in general, an increase of the agricultural indebtedness of a country is usually a sign of prosperity. But it is a sign of prosperity only if the increase of land values on which the additional mortgage debt is based has been caused, not by speculation or by an abnormal rise in the prices of products, but by an actual increase in the volume of production. It is essential not only to the welfare of society in general but also to the security of the farmer himself that any increase in the returns from agriculture shall have resulted mainly from an increase of production rather than from high prices.

Sources of Mortgage Credit

The principal sources of mortgage credit are: (1) the individual lender; (2) the life-insurance company; (3) the bank; (4) the state; (5) the mortgage company; (6) the building and loan association. These will be considered in the order stated.

(1) In most communities there are individuals willing to loan to their neighbors, because through personal supervision they can minimize risks which exclude outside lenders, and because by loaning directly they avoid paying the middleman's commission. This form of credit offers certain advantages to the borrower, but it lends itself to abuse. It plays an important rôle in this country, but no statistics concerning it are available.

(2) Perhaps the most important source of farm mortgage loans is the insurance company. It has been recently estimated that 172 of the leading life insurance companies have outstanding rural loans to the amount of $572,000,000, or about one-fifth of

the entire agricultural mortgage indebtedness. They operate in all parts of the country where agricultural conditions are sufficiently well established and where land values are high enough to furnish adequate security for a fairly large loan. Great caution is exercised and the inclusion of a locality in the territory of one of these companies is evidence of that locality's prosperity and good standing. But even in good sections, loans on small farms are not favored. The companies not infrequently make their investments through well-established mortgage companies, but they usually act through local agents thoroughly acquainted with the conditions in their districts. These agents make the appraisals and exercise general supervision over the loans. The company, however, employs its own attorney and inspectors, who pass final judgment on the valuations, titles and papers submitted by the agents.

Each year sees an increase in the investments of life insurance companies in farm loans. This is due to the improvement of the average risk, to growing confidence in the security of such loans and to the comparatively high rate of interest which they yield.

(3) In general, it is not the function of a bank to make mortgage loans. Not until the passage of the Federal Reserve Act of 1913 were national banks permitted to loan on real estate, though it has been their common practice to take real-estate mortgages as added security for personal loans. Section 24 of the Federal Reserve Act provides that any national bank not situated in a Central Reserve city may make loans on improved farm land, not to exceed 50 per cent of the actual value of the property offered as security and for a period not exceeding five years. The bank may make such loans in an aggregate sum equal to 25 per cent of its capital and surplus, and to $33\frac{1}{3}$ per cent of its time deposits. What is likely to be the result of the new policy thus inaugurated?

For years there has been agitation both within and without the ranks of the national banks for the adoption of this policy; and now that it has finally been adopted, it is heralded as a great boon to agriculture. In a recent statement from the Treasury Department (reported in the daily papers of June nineteenth)

attention was called to the fact that at the present time $500,000,000 is available for farm-mortgage loans. The writer, however, does not share the belief that the making of real-estate loans by national banks is in accordance with the principles of sound banking, and even if it were, he does not believe that such loaning would prove profitable to the banks or convenient for the farmers.

A bank's primary function is to make possible the employment of capital temporarily out of use. This it does by establishing a reservoir of liquid funds known as deposits. It should not act as a primary agent of investment, even to the extent involved in making five-year mortgage loans. The resources of a bank should be kept so liquid that they will be immediately available in times of stress. The time deposits of even the country national bank do not bear the same relation to the bank as the savings deposits bear to the industrial savings bank. The restriction of the amount to be loaned to $33\frac{1}{3}$ per cent of the time deposits and of the term to five years is an admission of this fact. Yet it is difficult to see why this five-year restriction was made, since from the standpoint of a bank a five-year loan is no more liquid than a ten-year loan.

Further, in meeting the demands of farmers for personal loans, the bulk of which run for a period of from six months to a year and are therefore not short-time loans in a strict sense, national banks are subjected to as great a strain as they should be called upon to bear.

The banks are not likely to find it profitable to make the permitted mortgage loans, since the rate could not be higher than that on commercial loans; while farmers can secure loans locally from individuals or from outside sources at lower rates. In Illinois or Minnesota, for example, farmers to whom a national bank would care to loan on mortgage can secure loans on their farms at a rate below that which the bank charges on their personal loans and even lower than that paid the bank by the local merchant. Even if it be granted that under certain conditions it would be to the bank's advantage to make the mortgage loans, a five-year term would be too short if the loan was required for

purchase. It is to be borne in mind, also, that a farmer who would have to resort to mortgaging for improvements or equipment would already have a mortgage on his farm and could therefore not offer acceptable security to a national bank.

The conclusion is inevitable that the newly authorized loans cannot become important. This is overwhelmingly borne out by the experience of our state banks and by that of European banks. It is interesting to note in this connection that the Scotch banks, which have been wonderfully successful in meeting the demands of agriculture, do not, if they can avoid it, accept real estate as security. One cannot but suspect that a great deal of the clamor for the law permitting national banks to make mortgage loans has been raised by men ignorant of banking principles, eager to propitiate those who regard the national banks as oppressors, or by bankers who have permitted their judgment to become warped.

State banks are not restrained by law from making mortgage loans, and such loans, while not large for the individual bank, in the aggregate have reached a very large sum. The Comptroller's report for 1914 gives this amount as $258,398,352.95. Indirectly, by acting as agents of outside investors, both national and state banks have made enormous sums of capital available to farmers. Unlike these banks, trust companies and savings banks have in trust funds which may safely be loaned on mortgage. But while the trust company has performed a very important service in the matter of making agricultural loans, savings banks, which are largely confined to our industrial centers, have found urban loaning more profitable.

(4) Some states loan to farmers from the permanent school fund. Up to the present time this has but slightly influenced the farm-mortgage situation, but recent agitation favors a greater liberality in this practice. Authorities have rightly felt, however, that these funds should not be loaned without adequate security, and farmers who can offer such security would have no trouble in obtaining loans elsewhere.

(5) During the last quarter of the nineteenth century numerous mortgage companies were organized which obtained their

funds through the sale of debenture bonds. Through unscrupulous management and lack of public supervision many of these companies were led into careless and excessive loaning which involved them and their gullible investors in the collapse of the early '90s. Some, however, were conservatively managed and are still in existence, and at present mortgage companies are playing an important rôle in the making of farm loans, although the issue of debenture bonds has been practically given up.

There are two classes of mortgage companies. The first class are really mortgage brokers. They are without resources and are therefore not in a position to assume financial responsibility. They receive the farmer's application, appraise his property, draw up the papers and, on finding a purchaser of the mortgage, pay over the sum to the farmer. As agents, they collect the interest and generally supervise the loan. The objections to such companies are that the farmer must wait for his loan until a purchaser can be found, and that in case of defaulted interest or of foreclosure the inconvenience falls on the investor.

The second class of mortgage companies occupy the position of underwriters. On the farmer's application the company makes an appraisal of his farm and if willing to grant the loan, does this, after the necessary preliminaries, in its own name and from its own resources. It then sells the mortgage to the investor and endorses it to him. But if the loan is too large to be made by a single investor, the company itself retains the mortgage and sells serial bonds issued against it. The company guarantees the title, collects the interest and advances it in case of delay, and generally supervises the loan. It keeps the investor's money constantly employed by reinvestment in new mortgages as the old ones become due.

(6) The building and loaning associations, which are now found in practically all parts of the country and which have rendered great service to home buyers in our smaller cities and towns, until very recently took mortgages on urban property only; but in the older parts of the country they are now attempting to extend their activities to the country districts, and in some localities their loans to farmers have begun to assume considerable

proportions. For example, the Ohio Building and Loan Associations have outstanding at the present time five thousand loans, amounting to over $11,000,000. The loans run from one to sixteen years. The associations have shown themselves capable of adaptation to the peculiar needs of farmers, and there is every reason to believe that they will become a fruitful source of farm loans.

In a country so extensive and of such widely varying conditions it is impossible to determine the average rate the farmer is paying. On the basis of similarity in mortgage conditions the country may be divided into three regions — the older sections of the North Atlantic and Middle West, the South, and the newer sections of the West and Northwest. But it should be borne in mind that even within these regions rates vary greatly between communities, and even between farmers of the same community.

In the most favored sections of the North the rate is about 5.5 per cent plus a 2 per cent commission distributed over five years, which makes the cost of the loan about 5.9 per cent. The commission covers all expenses save the registration fee. In the less-favored sections the rate is $\frac{1}{2}$ per cent to $\frac{3}{4}$ per cent higher, that is, it varies from about 6.4 per cent to about 6.65 per cent. The North Atlantic and Middle West bear about 60 per cent of the entire farm-mortgage indebtedness of the country.

In the South the majority of the borrowers pay 6.5 per cent plus a 2 per cent annual commission, or 8.5 per cent. This section bears about 20 per cent of the total mortgage indebtedness of the country.

In the West and Northwest the rate is about the same as in the South. This section bears about 20 per cent of the mortgage debt of the country.

But there are numerous exceptions to these statements of rates. Many farmers are able to borrow money at from 4 to 5 per cent, while in the South and in the newer sections of the United States loans not infrequently pay 10 per cent interest, with the addition of a 3 to 5 per cent annual commission.

Rates may also be approximately estimated from the yield of mortgage loans to investors. The usual rate offered to investors by mortgage companies making loans in the Northwest is 6 per cent, though the rate varies, according to the risk, from 5.5 per cent to 7 per cent. In the South the usual rate is 7 per cent, though some loans are made at 6 per cent. The commissions charged by the companies vary, according to risk and competition, from 1 per cent to 3 per cent.

The president of a mortgage company located in the extreme Northwest states that in order to cover expenses and make adequate profits the mortgage company must have an annual margin of at least 1.5 per cent above the rate quoted to the investor. In other words, in that region the farmers who are more favorably situated pay from 7 per cent to 7.5 per cent. The annual margin on the less desirable loans is probably from 2 per cent to 3 per cent, and the interest is from 8 per cent to 9.5 per cent. The president of a company located in the Middle West states that its mortgages net the investor from 5.5 per cent to 6 per cent, that the cost of making the loan is $\frac{7}{10}$ per cent and that the additional charge for profit makes the cost to the farmer from 7 per cent to 7.5 per cent. These figures are significant in connection with the fact that the company has outstanding mortgages to the amount of $15,000,000, and that it will not do business in a community which does not annually furnish mortgage paper amounting to $200,000.

The local middleman plays an important part in mortgage loaning in the United States. While the better-organized mortgage companies urge the farmer to deal directly with them, he nevertheless often pays a commission to a third party for telling him where he may secure a loan, and in many parts of the country there are middlemen who perform no other function. In certain sections, however, the isolated position of the farmer, his ignorance of business, his lack of system and his dependence on outside capital make a middleman who is familiar with him and his affairs a necessity. So varied are the conditions under which such a middleman acts that it is practically impossible to generalize as to the cost of his services; but in most cases it is not exorbitant.

The period of a mortgage loan is an important element in determining its cost. In the United States, as a whole, the usual period is five years, but in the South small loans are often made for three years and in the best regions of the North some loans are made for ten. In the early history of mortgage loaning, loans were small in proportion to the productivity of the land, and there was some economic justification for the three- or five-year term, since a loan could often be paid off within that time; but this is no longer the case for a large part of the country, though it still holds true in the South and the newer sections of the West. With so short a term frequent renewals are necessary, and the expense and uncertainty involved impose a needless burden on the borrower. The usual excuse for the short term is that, since the mortgage contains no clause providing for foreclosure in the case of depreciation or for partial payments, the short term is the lender's only means of self-defense. But this is a poor argument, since the farmer would doubtless consent to the inclusion of such a clause if he could thereby secure a longer term with the privilege of making partial payments. The real reason for short periods is to be found in the desire of the investor or his agent for commissions on renewals. In partial extenuation it may be noted that the initial cost of making a loan is often so great that if the hope of future profits from renewals were to be eliminated, initial commissions would have to be made larger.

Another element of the cost of the mortgage loan is the expense of registration, of searching and perfecting titles, of abstracting and so forth. This is sometimes made an extra charge. The registration fee, which in many states is merely nominal, is always paid by the borrower. In some states, however, its amount depends on the length of the document and therefore bears no relation to the amount of the loan. Often it is a grievous burden on the small borrower. Some states have introduced the Torrens system of title registration, thereby reducing the expense to a minimum. In other states abstract companies have done much to reduce these costs. In the South, however, such companies are not common, and since the records must be searched from the beginning for each new mortgage, the cost is high.

Personal Indebtedness

There has been no general investigation into the amount of personal indebtedness of the American farmer. Holmes estimates the total rural indebtedness to be $5,000,000,000, of which $2,795,000,000 is real-estate credit and the rest is personal credit distributed as follows: chattel mortgages, $700,000,000; liens on crops other than cotton, $450,000,000; cotton crop liens, $390,000,000; unsecured debts to local merchants, $250,000,000; and other unsecured debts, $410,000,000.

With regard to its source personal credit may be classified as: (*a*) merchant's credit, including store credit, dealer's credit and factor's credit; (*b*) bank credit.

The practice among storekeepers of selling to farmers goods to be paid for after the harvest is almost as universal as agriculture itself. It is less prevalent in regions of diversified farming, where the farmer, from the sale of eggs, poultry, milk, etc., has a weekly income available for ordinary household expenses. But where this is not the case, store credit flourishes even if banking facilities are good. This is due partly to the convenience of the system, partly to the failure of farmers to realize that in paying the "credit prices" of the storekeeper they are paying him a rate of interest higher than they would have to pay the bank and partly to the fact that the storekeeper can give credit to farmers who would be unable to obtain it from the bank. The amount of this ordinary store credit cannot be estimated; although on the whole it has declined in this country, it is still enormous.

There exists, however, in the South, a far more important form of store credit. The local merchant not only gives credit for the ordinary family supplies but in reality finances the growing crop — contracting to make a definite loan to be taken in commodities. If the farmer is an owner or a responsible tenant, the merchant makes the loan directly and may take a mortgage on the crop. He may even prescribe the kind of crop to be grown, lay down general rules for its cultivation, supervise it in every stage of its growth and insist on its sale to him when harvested. But otherwise the loan is made through the landlord, who assumes the

responsibility of payment. This form of credit is due to special economic and social conditions — the constant shifting of the rural population and the fact that a large part of this population are of a race still in its economic infancy — rather than to any lack of banking facilities. For the majority of such farmers cash credit is out of the question, since they would not use it for making their crop but would squander it. A bank, however, often lends the merchant the money for buying the supplies to be advanced to the farmer. As an inevitable result of the expense and risk of granting this form of store credit, its cost is high, and the system undoubtedly lends itself to grave abuses. With the development of economic sense it is declining; but without such credit independent farming would have been impossible for a large part of the southern farmers.

The substitution of expensive machinery for labor is a marked characteristic of American agriculture, and a large part of this machinery is supplied on credit by the manufacturer, who takes the dealer's or the farmer's notes and in case of need discounts them, sometimes at the farmer's own bank but more often at some metropolitan bank. This form of credit, known as dealer's credit, flourishes even in regions where farming is well established and credit highly organized. There has been much discussion as to the cause of this condition, and it is urged that the farmer pays more for this credit than he would for bank credit and that the manufacturer is often embarrassed for lack of funds to carry on the business. But there are certain good reasons for the existence of the system.

First, such credit is easily obtained. The dealer knows that the farmer's credit is good and that he can add enough to the price to make up for bad debts. Knowing that the farmer will buy more on credit, he does not encourage cash payment. A second reason is that the manufacturer can give credit for a longer period than can the bank and that the security, which consists largely of the machine itself, is more acceptable to him than to the bank. Finally, the farmer often prefers to save his bank credit for other purposes.

In the past grave abuses have grown out of this form of credit. Farmers have been led into extravagant purchase of machinery

and have involved themselves and the manufacturers in ruin. But though there is still room for improvement, the past ten years have witnessed a revolution. While still willing to sell on time, manufacturers have put their business on a higher plane. Their rates of interest are the same as those of the local bank, and they exercise greater care than formerly in granting credit and are able to sell on time at practically cash prices.

In factor's credit the loan is made not in supplies but in cash, though the purpose for which it is to be used is rigidly prescribed. In the South the cotton factor advances the farmer the money for financing his crop, and the farmer contracts to plant a certain number of acres of a certain crop, cotton for example, and to sell his crop to the factor. In the North a live stock commission firm advances money to the farmer for the purchase of live stock, which he contracts to sell through the firm. This live stock is usually lean cattle, but often it is breeding stock, and in this case the debt may extend over a number of years and be gradually paid off with the returns from the stock or herd. Such credit is needed on account of the scarcity of local capital and because in some cases the loan is of such a nature that the bank cannot make it. Owing to the factor's special knowledge of the purpose for which the loan is made and his ability to watch its application, he can make the loan at less risk and at a lower rate than the bank.

The extent to which bank credit is used by American farmers varies widely according to the economic development of the community. Where agricultural methods are well established and climatic conditions are such as to preclude the probability of crop failure the farmer enjoys practically the same credit advantages as the merchant. This is due to the peculiarly favorable conditions of American agriculture. Farms are comparatively large, and therefore the loans are of sufficient size to make it worth while for the banks to grant the accommodation. The farmers and the bankers belong to the same social class; indeed, the bank is not uncommonly owned and operated by the farmers themselves. Finally, our system of free banking has permitted the establishment of banks wherever they could be made to pay.

Conditions in Cass County, Iowa, may be taken as fairly typical of the banking situation in the better agricultural sections. The county has 17 banks with a total capital of $690,000, total deposits of $3,563,000 and loans aggregating $3,345,000. These banks are located in eight towns, of which the largest, with a population of 4560, has five banks. Five towns with populations of 1118, 949, 603, 552 and 490, respectively, have each two banks, and two towns with populations of 266 and 239 have one bank each. All the towns depend on agriculture for their prosperity, and the owners and patrons of the banks are mainly farmers.

Holmes estimates that in 102 counties of Illinois 921 banks afford two-thirds of all the personal credit obtained by farmers and that in Vermont the farmers obtain 70 per cent of their credit from the banks, while in the southern states of Virginia, Georgia, Arkansas and Mississippi they get from two-fifths to three-fifths of their credit from the banks. For the country as a whole, outside the South, he estimates that from one-half to seven-tenths of the credit to farmers comes from the banks.

Closely associated with the question of the amount of bank credit to farmers is that of its cost. Contrary to a common opinion, banks are no respecters of persons, and if the farmer pays more for his credit than other classes of producers, it is because it is more expensive to loan to him. As a rule this is the case. In the first place the credit required by the farmer is very different from that required by the merchant. The term is longer, renewals are more frequent and partial payments are unusual. While the moral risk is good, payments are slow, supervision is more difficult and the average size of the loan is smaller. Although the farmer's current-account deposits have shown a decided increase in the last twenty years, they are not of sufficient importance to warrant the bank in loaning to him against his balance.

Since the average farmer receives his income in lump sums and at infrequent intervals, he makes savings deposits rather than current-account deposits. The merchant, on the contrary, receives his income in daily increments, which he immediately puts at the

disposal of the banks through current-account deposits. Since, therefore, as the banker would say, the merchant is borrowing his own money, he is entitled to a somewhat lower rate than the farmer. In a community mainly agricultural the large amount of interest paid on time deposits imposes a heavy burden on the banks. In the South and in the newer states of the West, time deposits usually bring 5 per cent and often 6 per cent interest, and as long as such rates must be paid to attract and hold free capital in the community, just so long must the bank's borrowers feel the burden of high interest rates. Finally, since the credit demands of the farmer are not evenly distributed throughout the year, the bank often has idle money which it must invest in short-term commercial paper at a rate lower than that charged the farmer for his loan. This is not, however, as is often stated, discrimination against the farmer, for if the bank did not invest in such paper, he would have to pay a still higher rate for his loan.

II. PROPOSALS FOR REFORM

For some years the sentiment has been growing, that agricultural-credit facilities in this country are inadequate, that rates are too high and that in general credit institutions discriminate against the farmer, who has to get along with unorganized credit and endure the attendant evils. As remedies, there are suggested the formation of coöperative unions for the supply of personal credit and the creation of land-mortgage banks, the funds of which shall be obtained through the issue of debenture bonds. Certain states have taken the initiative in this reform by the removal of the restrictions on the formation of coöperative credit unions or by holding out special inducements for the creation of mortgage institutions. During the last two years the question of agricultural credit has claimed the attention of the Federal Government, which, in coöperation with the Southern Commercial Congress, sent a commission to Europe in the spring of 1913 to make a first-hand investigation of agricultural-credit conditions.

European Methods and Experience

In many European countries interesting and instructive results have been attained in the development of agricultural credit. It is from France and Germany that the United States has most to learn in this connection. Within the limits of the present article it is possible to give only the briefest outline of the agricultural-credit systems of these two countries.

In Germany the greater part of the personal credit of the owners of small and medium-sized farms is furnished by the Raiffeisen coöperative banks. Previous to the formation of these banks, of which the first was founded about the middle of the nineteenth century, there were no organized credit institutions to which such farmers could apply. Hence they were dependent on private lenders and were preyed on by usurers. Their common need and their common racial and religious sentiment facilitated the establishment of the Raiffeisen organization, which was based on the parish community, with the teacher, the priest and the public official as leaders. Out of these elements there grew a credit movement which is the admiration of the world and which has brought untold blessings to the German peasants. Not only has it afforded them ample and cheap credit but, through its educative influence, it has brought about their social regeneration. But the advocates of a similar system for this country overlook the fact that the conditions which made the German movement successful are almost entirely wanting in the United States. American farmers are not poverty-stricken; they are not victims of the usurer, and they are not without organized credit facilities; in neither race nor religion have they any bond of union; nor is the teacher, the priest or the official a leader in their community life. Furthermore, the struggle which has been required to create and maintain these institutions in Germany and to keep them true to their original purpose is too little understood in this country.

In France most of the farmers are men of small affairs and without experience in the use of bank credit, and they were practically without organized personal credit until the last quarter of

the nineteenth century, when such leaders as Durand, Rayneri and Rostand undertook to do for France what had been done for Germany and Italy.

The various banks which these leaders founded have rendered splendid service to small farmers, especially in southeastern France. But so great were the obstacles to be overcome that the progress of the movement was slow, and consequently the government felt called upon to undertake the reform of agricultural credit. After various attempts it finally created a system of local and regional banks which derived their funds from free grants by the Bank of France. These banks have made loans to farmers at the discount rate of the Bank of France and often at a much lower rate. Yet, despite the tempting rates, the French farmers, much to the chagrin of the government, have availed themselves of but a small portion of these funds. No adequate provision for the reimbursement of the State has been made.

In Germany a large part of the mortgage loaning is done by institutions especially organized for the purpose: (1) the Landschaften, which are coöperative associations of borrowers; (2) the State and Provincial Banks, which are public institutions and (3) the Joint Stock Mortgage Banks, which are commercial institutions organized under the Imperial Mortgage Bank Act of 1899. Of the other institutions which make mortgage loans, the savings banks are the most important. The total farm-mortgage indebtedness in Germany is approximately $2,000,000,000, and of this slightly over one-half is borne by the specially organized institutions, as follows: (1) the Landschaften, $750,000,000; (2) the State and Provincial Banks, $100,000,000 and (3) the Joint Stock Mortgage Banks, $170,000,000. The savings banks bear $850,000,000. The special mortgage-credit institutions derive funds from the sale of bonds issued against long-time, non-foreclosable mortgages. The savings banks, however, make the bulk of their loans against short-time, foreclosable mortgages.

The 3.5 per cent bonds of the Landschaften sell at the present time around 95 and net the investor about 3.7 per cent. The

addition of $\frac{1}{2}$ per cent to this rate to cover the costs of administration and the contribution to the reserve fund makes the farmer's rate from 4 to 4.5 per cent. He also pays the costs of appraisement and of making out the papers. The rates of the State and Provincial Banks and of the savings banks are slightly higher, while those of the joint-stock mortgage banks are from $\frac{1}{2}$ per cent to $\frac{3}{4}$ per cent higher. That German farmers enjoy exceptionally favorable rates is shown by the fact that Landschaft bonds bearing the same rates as government securities are usually quoted only from 1 to 2 points below the latter.

The only special mortgage-loan institution in France is the Crédit Foncier, founded in 1852. This institution was intended to render to the farmers of France the same service which the Landschaften render to those of Germany. It enjoys a monopoly of the right to issue real-estate mortgage bonds, and has become a powerful and world-famed institution. But it has signally failed to realize the hopes of its founders. Of the total rural-mortgage indebtedness of France, amounting to about $3,000,000,000, a little less than one-tenth is borne by the Crédit Foncier. Bonds recently issued (for example, in November, 1912) bore a 4.5 per cent rate. To this must be added the .6 per cent allowed for administration and the expense of making the loan, which the farmer pays and which in France is very heavy. Therefore, the French farmer is paying about the same rate as the farmers in the best agricultural districts of the United States.

Impressed by the fact that in Europe debenture bonds play so important a part in mortgage loans, the advocates of the reform, whether state or federal, of mortgage credit in this country base their various schemes on the issue of debenture bonds. But these enthusiasts have failed to understand the limitations of this very delicate credit instrument and, owing to lack of sufficient information, have exaggerated the success of Europeans in making debenture-bond loans; and furthermore, they have not attached sufficient weight to the great differences between European and American conditions.

The debenture bond resembles the railroad bond and the industrial bond in being impersonal, since the borrower and the

investor do not come into personal relation with one another; but it differs from them in being issued, not against a unit of property, under one management, but against a constantly changing mass of unrelated units of property, of which the management, in a country like the United States, may undergo a complete change in the course of a few years. Owing to this peculiarity of the security of debenture bonds, the greatest caution must be exercised in their issue. Among the farms constituting the security, there must be uniform conditions, well-established agricultural practices, little danger of disaster from crop failure or other cause and comparative absence of the speculative element from land values. Evidently the requirements are more nearly met in Europe than in the United States. In the greater part, indeed, of the agricultural area of our country they are not met at all. This is true of most of the South, most of the region west of the Missouri river and considerable parts of our best agricultural states — for instance, northern Michigan, northern Wisconsin, northern Minnesota and southern Illinois. And even in the same communities there are often wide variations in this respect.

The accurate appraisement of farms against which debenture bonds are to be issued is of the greatest importance. But it is exceedingly difficult, because farm incomes are subject to wide variation and farmers do not, as a rule, keep books. Hence, wherever debenture bonds are issued to a considerable extent, the appraisement is performed by public authorities, or, if not, is usually based on public tax valuations. In Germany, the Landschaften make their own appraisement, but usually on the basis of the tax-assessment lists; and the same method is used by those joint-stock mortgage banks which, owing to their having been established before the law of 1899, are permitted to make their own appraisements.

Owing to its extreme centralization, the great mortgage bank of France, the Crédit Foncier, has found appraisement difficult and expensive — a fact which has tended to restriction of its farm-mortgage loaning.

It is hardly necessary to point out that in the United States there is little to guide us in making appraisements. Changes in

ownership are frequent, farmers keep books much less than in Europe and tax valuations afford no guide whatever. Since debenture bonds are issued against long-term loans, there must be supervision of each loan after it is made, to insure that the claims of the contract shall be lived up to, the taxes paid, depreciation of the property prevented and so on. And as mortgages are gradually paid off and new ones substituted, great care must be exercised to prevent the impairment of the general security for the bonds through the substitution of inferior risks. In the United States the expenses of appraisement and supervision incident to the making of debenture-bond loans would be much greater than in Europe, and still further expense would result from the greater uncertainty of land titles.

The great cost of making debenture-bond loans accounts for the fact that in Europe the small farmers have not been able as a class to avail themselves of the advantages of such loans, since the profits are more than offset by the cost of making them. Furthermore, while it is generally conceded that in the long run the small farmer is as good a risk as the large farmer, yet owing to his lack of reserves, there is greater danger of foreclosure or forced management; and these would involve expense out of all proportion to the size of the loan. And finally investors are prejudiced against mortgage bonds issued against a mass of small loans.

The Landschaften are composed chiefly of large farmers. They do make some very small loans, it is true, but the number of such loans is comparatively insignificant and the average size of the loans is large. The joint-stock mortgage banks of Germany loan almost exclusively to large landowners. The Crédit Foncier also confines its loans chiefly to large farmers, as the expense involved makes loans under $1000 unprofitable. In 1912 the average size of its agricultural loans was $5000. The mortgage-bond institutions of Italy grant each year only a very small percentage of the loans applied for. That the small farmer is not served is shown by the fact that in 1912 the average size of their farm loans was $18,000.

This inability of the credit institutions to satisfy the needs of the small farmer has led the various governments to come to the

rescue by the establishment of special state-aided institutions. In Germany these are the State and Provincial Banks, noted above. In Denmark the constant complaint of the small landowners led to the establishment of special institutions, the bonds of which are guaranteed by the state. In France a recent law provides for state loans to small farmers.

The inability, however, of the debenture-bond system, even with state aid, to meet the needs of the small farmer is illustrated by the history of the German state and provincial institutions. They have been excellently managed, and no pains have been spared to win the support of the small farmers. But while numbers of small farmers have been accommodated, the rigidity of the system leads many to prefer to patronize the savings banks or the private lenders, despite the greater risk of foreclosure.

A further illustration of the inability of the debenture-bond system to adjust itself to agricultural conditions is afforded by the fact that in Germany during the past decade the greater part of the new mortgage loans have been made, not by the debenture-bond institutions, but by non-specialized agencies, although the former have greatly increased the amount of their loans in other directions. This situation calls for some explanation. In the first place, with the increase of mortgage indebtedness in Germany there has been an increase in the proportionate number of the less desirable risks and also an increase in the percentage of mortgage indebtedness on the old risks, with a resulting decrease of the margin of safety. Under such conditions amortization is necessary as a means of security. But these very conditions make it difficult to exact amortization. Even farmers favorably situated as to debt find amortization payments burdensome. In Germany and Denmark, where it was formerly the general custom to require amortization of long-time loans, the amortization principle was found to be unsuited to farming conditions; and except in the case of the German joint-stock banks, it has been practically abandoned save when amortization is needed to give added security. It is perfectly evident that in the United States compulsory amortization would debar from credit not only the farmers of the newer regions where capital is scarce but also those farmers of the older

regions who are seeking to become owners and whose capital has been exhausted by the first payments.

Secondly, it has been found in Europe increasingly difficult to market the debenture bonds at favorable rates owing to growing competition of other securities. In this country it has been generally assumed that such bonds would be so eagerly sought by investors that they would bear a rate of interest second only to that borne by bonds of the federal government. The probable rate has been estimated at 5 per cent and by many even at 4 per cent. Here, again, European experience has been disregarded. The bonds of the early Landschaften had the moral support of a powerful king. In the oldest Landschaften the security included all the property of the district, and in later times it has included all that of the borrowing members. The bonds were issued at a time when land was a chief source of wealth and therefore the main field of investment; and before the Landschaften were obliged to meet any considerable competition their bonds had already become familiar to investors and gained their confidence — confidence, it should be added, which has never been abused. But despite these favoring conditions, the bonds have gained only a local market, and the attempt to broaden the market by the formation of a Central Landschaft was unsuccessful. It is admitted that under present conditions the Landschaften cannot make loans at lower rates than can unorganized agencies. So that the only inducements they can offer borrowers are the longer term and the pre-payment privilege.

The Crédit Foncier, as is well known, resorts to a lottery to facilitate the sale of its bonds, but it does not attempt to compete with unorganized agencies for the mass of French farm loans.

If in Europe, despite the favoring conditions, the farm debenture bond finds a market with difficulty owing to the competition of other securities, how many times more difficult would be the marketing of such bonds in the United States, where such favoring conditions are wanting, and the obstacles to be overcome are much greater! In this country land is not regarded, as in Europe, as the foundation of national prosperity, and landownership is not the basis of social distinction both among people of

high and of low degree, nor is there the same devotion to the farm home. And, furthermore, social conditions are not such that farmers would be willing to assume joint liability. Our experience with land banks and debenture bonds has not been so fortunate as to inspire confidence in new ventures in this direction; and while it may be readily conceded that a repetition of the mistakes of former years may be avoided, it will take some effort to overcome the prejudice which these mistakes engendered.

Furthermore, the debenture bond would have to meet the competition of a flood of securities with which investors are thoroughly familiar and in which they have confidence. Apart from corporation and municipal bonds, which have a wide market, there are in every locality, county, village and school district bonds which are backed by the taxing power of the community and the issue of which is carefully guarded. Such bonds, with few exceptions, bear a rate of interest much higher than that which the enthusiastic advocates of debenture bonds expect them to bear. How can it be expected that investors will pay more for a bond secured by a farm than for a school-district bond practically secured by the mutual guarantee of all the farmers of the community?

Finally, there are already in the field excellent agencies — mortgage companies — with well-established reputations and large assets, which give the investor all the advantages held out by the debenture-bond company, with the added advantage, as regards securities, of having the individual mortgage turned over to him. And it is difficult to see wherein the debenture-bond company could offer the borrower lower rates of interest or, in general, any better terms than these companies offer. The supposed advantage of market ability which is claimed for the debenture bond is of but little practical moment, since, as we have seen, the market for such bonds is very restricted, and they are usually bought as a permanent investment.

Nor has state aid been of any great assistance in increasing the marketability of the bonds or, in general, in advancing the cause of agricultural credit. The state never allows itself to be treated as the ordinary investor. It always requires more and gives

less. Making the bonds of the Landschaften legal investment for trust funds and the like has made it harder, Trosien declares, for farmers to obtain credit from these institutions, because it has forced the latter to employ more rigid methods in making loans.

Not only does direct financial aid by the state tend to demoralize the individual but in the long run it also dries up the sources of credit. This is the testimony of most of the Europeans who have given their lives to the solution of the problems of agricultural credit. Some of them at first advocated state aid; but when confronted with its results, they became its ardent opponents. In response to appeals from the leaders of the coöperative-credit movement, for example, the Prussian Government established the Prussian Central Coöperative Bank; but despite the excellent management of the bank, it soon became apparent that it was stifling the coöperative-credit movement, and the latter has for some time been trying to shake itself free from the Bank's grasp. In a recent letter to the writer a leading German professor of economics states, "It is true that the central coöperative banks of the farmers, namely, the Agricultural Central Loan Bank of the Raiffeisen coöperative societies and the Agricultural Imperial Coöperative Bank in Darmstadt, have not thriven well. The main reason is that the Central Coöperative Bank, founded in Prussia with the aid of an interest-bearing state loan, has drawn to itself the equalization business of the provincial central coöperative banks. The Prussian Central Coöperative Bank is very cleverly and energetically administered, so that the competing institutions were in a difficult position." At the International Coöperative Congress in 1894 the question of state subventions received much attention. A few extracts will show the drift of the statements made on this occasion by the European leaders. Doctor Alberti of Germany declared, "Every manner of subvention by the state must be rejected. And my opinion, supporting this argument, is based on forty years' experience." Herr von Elm expressed strong objection to state aid and said that the state should confine its efforts to education and emancipating laws, that it should "give the agriculturists elbow room and let them alone." M. Füredi of Hungary

stated, "In spite of state aid lavished on the central credit organization, the rate of interest is 7 to 8 per cent for money advanced by the state gratis out of the taxes"; and Doctor Karacsonyi, also of Hungary, declared, "There are no successes to be put to the credit of state aid. Money so lightly got is the producer of extravagance." Similar utterances came from Wrabetz of Austria, and from Chiousse and Durand of France.

Legislation Proposed

In conclusion, a sketch may be given of the bills now pending in Congress for promoting agricultural credit.

The American Commission published its report in the autumn of 1913; and about the same time a bill known as the Fletcher Bill, the provisions of which were supposed to embody the opinions of the Commission, based on their European inquiries, was introduced in the Senate. It provided for the formation of local and state land banks and a federal land bank situated at Washington. The local banks were to issue debenture bonds, which were to be guaranteed by the state bank, and, if necessary, by the central bank; and financial assistance from the United States Treasury was provided for.

Although the Fletcher Bill was supposed at the time to embody the opinions of the Commission, it did not meet with the approval of the administration, and was subsequently withdrawn. In its place there was introduced, with the approval of the administration, the Moss-Fletcher Bill. This provided for the establishment of National Farm Land Banks to be under the immediate direction of a special Commissioner, who should preside over a Bureau of Farm Land Banks to be created in the Department of the Treasury. Such banks might be organized by any ten persons contributing a minimum capital of $10,000, of which 50 per cent was to be immediately paid up. They were empowered to accept local deposits up to 50 per cent of their paid-up capital and surplus, to receive postal-savings funds to the same extent on a par with other government depositories, and even to engage in general banking business. But their chief power lay in their right

to issue debenture bonds against rural real-estate mortgages for a period not exceeding thirty-five years. Bonds were to be issued only against loans running for more than five years. The bond issue was limited to fifteen times the capital and surplus of each bank and was to be secured by first mortgages on farm lands located in the state where the bank was situated. An attempt was made to give standing to the bonds by making them legal investment for time deposits of national banks and of savings banks in the District of Columbia and for trust funds and estates administered by the United States courts, and by providing that they might be used as security for loans from national banks to national farm land banks or to individuals. The value of the mortgages was to be at least equal to the par value of the bonds outstanding. The rate of interest charged for the loan should not exceed the rate on the bonds by more than 1 per cent, which should cover all administration charges. The bill also prescribed the purposes for which loans might be secured: (*a*) to "complete the purchase of agricultural lands mortgaged; (*b*) to improve and to equip such lands for agricultural purposes; and (*c*) to pay and discharge debts secured by mortgages or deeds of trust on said lands." Loans were not to exceed 50 per cent of the value of improved farm lands, or 40 per cent in the case of unimproved land. The appraisement was to be made by a committee of three, appointed by the board of directors from their own body.

Numerous other bills were also introduced at about the same time as the Moss-Fletcher Bill, among which the Bathrick Bill deserves attention. This provided for loans by the government, at a rate not to exceed $4\frac{1}{2}$ per cent, to farmers direct or through farm credit associations which should become surety for all mortgages made through them. The government was to borrow, at a rate not to exceed $3\frac{1}{2}$ per cent, the funds to be used for this purpose; and the distribution of such funds was to be made by a bureau to be established in the Department of Agriculture.

Extensive hearings on the Moss-Fletcher Bill were held, during which the impression gained ground among members of Congress that this was not radical enough to satisfy the farmers, that it was a bankers' bill drawn in the interest of the lenders

rather than of the borrowers and that it was inadequate to afford the needed relief. It was claimed that the Bathrick Bill had the support of the farmers' organizations. The hearings also brought out the fact that the Moss-Fletcher Bill by no means met the unanimous approval of the members of the Commission. The upshot of the matter was that the Moss-Fletcher Bill was withdrawn and the Committee on Banking and Currency gave out the statement that an expert had been summoned to draw a new bill. This was subsequently introduced under the name of the Federal Farm Loan Act.

The Federal Farm Loan Bill differed radically from its predecessors. It aimed to create a system analogous to the newly established federal bank system. Its administration was placed under the control and direction of the Federal Reserve Board, which was to appoint a Farm Loan Commissioner. Any number of natural persons not less than five might form a National Farm Loan Association, whose application for a charter must be passed upon by the Farm Loan Commissioner. The capital stock of such an association should not be less than $10,000; and this stock might be taken on the Building and Loan Association plan. The coöperative principle was also recognized in the provision that loans should be made to shareholders only. The association was to have the power to make loans on first farm mortgages only, the rules governing the making of the loans following the general lines of the Moss-Fletcher Bill except that no power to issue bonds was granted the association and that appraisal was placed in the hands of the Farm Loan Commissioner.

The Federal Reserve Board further was to establish as many Federal Land Bank districts as there are Federal Reserve districts. In each one of these districts there should be organized a Federal Land Bank, with nine directors, three appointed by the board, six elected by the farm associations. Each association must subscribe for at least $1000 of capital stock of the Land Bank, and each Land Bank must, before beginning business, have at least $500,000 in capital stock. In case a bank failed to get this amount subscribed "it shall be the duty of the Secretary of the Treasury to subscribe the said unsubscribed balance." The

Land Banks (not the associations) were to have power to issue, subject to the approval of the Federal Reserve Board, and to sell farm-loan bonds at a rate of interest on such bonds not to exceed 5 per cent. The trustees of the postal savings banks were directed to employ in the purchase of farm-loan bonds, if they could be obtained below par, the funds withdrawn from postal savings depositories; and they might use their discretion in purchasing them at par. It was further provided that the Secretary of the Treasury, on application from one or more of the Federal Land Banks, should purchase from the Land Banks farm-loan bonds not previously issued or sold, in an amount not to exceed $50,000,000 in any one year. Varied and far-reaching powers of supervision were given to the Federal Reserve Board.

This bill should have met the approval of those who believed that the Moss-Fletcher Bill did not go far enough. It was certainly not a bankers' bill, because all chance for private initiative and all possibility of profit were shut out. Moreover, there was a superabundance of federal supervision and financial assistance. But this federal assistance was made dependent on the formation by private initiative of farm-loan associations and the bill carefully removed all incentive to such action.

The administration, however, soon let it be known that it was unalterably opposed to the granting of financial aid by the federal government, and all attempts to put through a rural-credits bill were abandoned for the current session.

A perusal of the numerous bills presented and of the voluminous reports of the hearings must convince one that there is an utter lack of adequate information as to the actual credit needs of the farmer and of the extent to which existing agencies are supplying them. And moreover, when one studies the measures in detail he discovers that instead of profiting by the experience of Europeans our legislators have proposed measures which these have avoided or abandoned. Credit agencies in great variety have come into being in the United States to meet the demands of an undeveloped, unstandardized agriculture. The evils of this lack of credit organization have been greatly exaggerated, but the time has probably come for more organization. Such organization

must, however, be attained gradually, and adapted to the peculiar conditions of this country. European methods must be used with caution. It is exceedingly doubtful, for example, whether the debenture-bond system is feasible for any considerable part of the country. If European experience has anything to tell us about state aid, it is "Beware."

While there is need of federal legislation, the bills thus far introduced have provided for too much centralization and too much federal interference in a country as large as this and with such varied conditions. A general plan of organization for the entire country is requisite; but it should be left to the individual states to determine the practical details of administration and control. The conditions of agriculture in this country do not warrant special legislation, such as has been proposed, limiting the operations to agricultural land; nor are the farmers asking for it. Not only does such legislation do violence to our political sense, but in this particular case it would defeat its own end.

In the final analysis, the solution of the problem of rural credit is in the hands of the farmers themselves. They must put their business on a more efficient basis and must learn to work together for their mutual interest. The former is a problem of farm management, the latter, one of rural organization. That the shortcomings of the American farmer in both these fields have at last been forced on the attention of the nation is evidenced by the many praiseworthy efforts which are now being put forth by so many agencies to remove these obstacles in the way of agricultural progress.

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